File: Fergus Co
Sanitation Inc
grd wtr (ANALY)

DAMSCHEN & ASSOCIATES, INC.
CONSULTING ENGINEERS

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MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

February 19, 1998

Pat Potts
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Ms. Potts:

Enclosed please find the results of the Autumn, 1997 ground-water monitoring at the Sanitation, Inc. landfill east of Lewistown, Montana. Sampling was undertaken on November 4, 1997.

Ground-water Flow

All of the wells were purged dry and recovered at essentially the same rates as previously measured. Monitoring well SIMW-1, which has been nearly dry during previous sampling events, had ample water in it for sampling.

Since it can be assumed that the hydraulic conductivity has not changed significantly in the vicinity of wells SIMW-1 and -2 and piezometer SIP-2, the seepage velocity can be calculated using the data and assumptions initially applied to this facility. The initial calculations used at SIMW-2 were a hydraulic conductivity of 75 feet per day (ft/day). The hydraulic gradient at this point is 0.045 and the porosity is assumed to be 0.35 because of the generally poor sorting of the sediments. The seepage velocity at SIMW-2, then, can be calculated using

$$V_s = KI/n_e$$

as 9.64 feet per day. The hydraulic conductivity at SIMW-3 was measured at 14.6 ft/day and the hydraulic gradient in the vicinity of the well is 0.056. Using the estimated porosity of 0.35, the seepage velocity can be calculated as 2.34 ft/day.

Ground-water Quality

Three indicator parameters exceeded predicted values in the two down gradient wells. In monitoring well SIMW-2, sulfate and chloride were found to exceed statistical background with concentrations of 211 and 58 milligrams per liter (mg/l), respectively. Human health standards have not been established for these parameters. Nitrate plus nitrite nitrogen was detected at 9.53

mg/l in monitoring well SIMW-3. The established human health standard for nitrate is 10 mg/l.

Three volatile organic compounds (VOCs) were detected in monitoring wells SIMW-1 and -2. Dichlorodifluoromethane, 1,1,1-trichloroethane, and trichlorofluoromethane were detected at levels below the practical quantitation limit in these two wells. The reported values are shown in the enclosed table. Since the VOCs occur in down-gradient and background wells, ANOVA is not an appropriate method for statistical evaluation. An intra-well prediction interval shows that none of the values exceeded the predicted range of values.

Historical values for the VOCs are included with the statistical evaluation, showing that the conditions do not appear to have changed significantly at the Sanitation, Inc. landfill. Based upon the latest data, we have concluded that the Sanitation, Inc. landfill should continue with their semi-annual monitoring for Table 1 parameters. If you have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,

DAMSCHEN & ASSOCIATES

Bruce L. Siegmund
Project Hydrogeologist

CC: Al Gallagher, Sanitation, Inc. landfill manager
Enclosures

Table of reported concentrations of volatile organic compounds from ground-water samples taken from the Sanitation, Inc. landfill on November 4, 1997.

Well	dichlorodifluoromethane	1,1,1-trichloromethane	trichlorofluoromethane
SIMW-1	0.68	0.40	0.33
SIMW-2	0.26	0.42	0.20

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-1
FCID: D&A160 NUMBER OF SAMPLE DATES: 4
PARAMETER: Nitrate,Nitrite

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	4.490	mg/l		N/A
06/10/96	4.240	mg/l		N/A
06/03/97	5.560	mg/l		N/A
11/04/97	3.740	mg/l		N/A

02/19/98

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT
WELL: SIMW-1
FCID: D&A160
NUMBER OF SAMPLE DATES: 4
PARAMETER: 1,1,1-Trichloroethane

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	0.670	ug/l	j	8260
06/10/96	0.340	ug/l		8260
06/03/97	0.770	ug/l	j	8260
11/04/97	0.400	ug/l	j	8260

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-1
FCID: D&A160 NUMBER OF SAMPLE DATES: 4
PARAMETER: Trichlorofluoromethane

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	0.490	ug/l		8260
06/10/96	0.400	ug/l		8260
06/03/97	0.470	ug/l	j	8260
11/04/97	0.330	ug/l	j	8260

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-2
FCID: D&A160 NUMBER OF SAMPLE DATES: 5
PARAMETER: Sulfate, dissolved

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	224.000	mg/l		N/A
06/10/96	195.000	mg/l		N/A
10/22/96	214.000	mg/l		N/A
06/03/97	202.000	mg/l		N/A
11/04/97	211.000	mg/l		N/A

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-2
FCID: D&A160 NUMBER OF SAMPLE DATES: 6
PARAMETER: Dichlorodifluoromethane

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	ND<1.000	ug/l	j	8260
06/10/96	0.180	ug/l	j	8260
10/22/96	0.230	ug/l	j	8260
06/03/97	ND<1.000	ug/l		8260
06/03/97 - Dup A	ND<1.000	ug/l		8260
11/04/97	0.260	ug/l	j	8260

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-2
FCID: D&A160 NUMBER OF SAMPLE DATES: 6
PARAMETER: 1,1,1-Trichloroethane

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	ND<1.000	ug/l	j	8260
06/10/96	0.180	ug/l	j	8260
10/22/96	ND<1.000	ug/l		8260
06/03/97	ND<1.000	ug/l		8260
06/03/97 - Dup A	ND<1.000	ug/l		8260
11/04/97	0.420	ug/l	j	8260

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-2
FCID: D&A160 NUMBER OF SAMPLE DATES: 6
PARAMETER: Trichlorofluoromethane

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	ND<1.000	ug/l	j	8260
06/10/96	0.160	ug/l	j	8260
10/22/96	0.150	ug/l	j	8260
06/03/97	ND<1.000	ug/l		8260
06/03/97 - Dup A	ND<1.000	ug/l		8260
11/04/97	0.200	ug/l	j	8260

02/19/98

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT
FCID: D&A160
PARAMETER: Dichlorodifluoromethane

WELL: SIMW-3
NUMBER OF SAMPLE DATES: 6

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	0.200	ug/l	j	8260
06/10/96	ND<1.000	ug/l		8260
10/22/96	ND<1.000	ug/l		8260
06/03/97	ND<1.000	ug/l		8260
11/04/97	ND<1.000	ug/l		8260
11/04/97 - Dup A	ND<1.000	ug/l		8260

02/19/98

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT
FCID: D&A160
PARAMETER: 1,1,1-Trichloroethane

WELL: SIMW-3
NUMBER OF SAMPLE DATES: 6

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	0.540	ug/l	j	8260
06/10/96	ND<1.000	ug/l		8260
10/22/96	ND<1.000	ug/l		8260
06/03/97	ND<1.000	ug/l		8260
11/04/97	ND<1.000	ug/l		8260
11/04/97 - Dup A	ND<1.000	ug/l		8260

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-3
FCID: D&A160 NUMBER OF SAMPLE DATES: 6
PARAMETER: Trichlorofluoromethane

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	0.170	ug/l	j	8260
06/10/96	ND<1.000	ug/l		8260
10/22/96	ND<1.000	ug/l		8260
06/03/97	ND<1.000	ug/l		8260
11/04/97	ND<1.000	ug/l		8260
11/04/97 - Dup A	ND<1.000	ug/l		8260

02/20/98

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT
WELL: SIMW-1
FCID: D&A160
NUMBER OF SAMPLE DATES: 3
PARAMETER: Sulfate, dissolved

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	95.000	mg/l		N/A
06/03/97	92.000	mg/l		N/A
11/04/97	81.000	mg/l		N/A

02/20/98

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT
WELL: SIMW-1
FCID: D&A160
NUMBER OF SAMPLE DATES: 4
PARAMETER: Nitrate,Nitrite

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	4.490	mg/l		N/A
06/10/96	4.240	mg/l		N/A
06/03/97	5.560	mg/l		N/A
11/04/97	3.740	mg/l		N/A

02/20/98

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT
WELL: SIMW-2
FCID: D&A160
NUMBER OF SAMPLE DATES: 5
PARAMETER: Sulfate, dissolved

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	224.000	mg/l		N/A
06/10/96	195.000	mg/l		N/A
10/22/96	214.000	mg/l		N/A
06/03/97	202.000	mg/l		N/A
11/04/97	211.000	mg/l		N/A

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-2
FCID: D&A160 NUMBER OF SAMPLE DATES: 5
PARAMETER: Nitrate,Nitrite

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	3.780	mg/l		N/A
06/10/96	4.180	mg/l		N/A
10/22/96	2.600	mg/l		N/A
06/03/97	2.110	mg/l		N/A
11/04/97	3.950	mg/l		N/A

02/20/98

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT
WELL: SIMW-3
FCID: D&A160
NUMBER OF SAMPLE DATES: 6
PARAMETER: Sulfate, dissolved

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	140.000	mg/l		N/A
06/10/96	139.000	mg/l		N/A
10/22/96	133.000	mg/l		N/A
06/03/97	134.000	mg/l		N/A
11/04/97	131.000	mg/l		N/A
11/04/97 - Dup A	131.000	mg/l		N/A

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-3
FCID: D&A160 NUMBER OF SAMPLE DATES: 6
PARAMETER: Chloride, dissolved

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	34.000	mg/l		N/A
06/10/96	30.000	mg/l		N/A
10/22/96	34.000	mg/l		N/A
06/03/97	27.000	mg/l		N/A
11/04/97	30.000	mg/l		N/A
11/04/97 - Dup A	30.000	mg/l		N/A

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-3
FCID: D&A160 NUMBER OF SAMPLE DATES: 6
PARAMETER: Nitrate,Nitrite

DATE	RESULT	UNITS	DATA QUAL	METHOD
08/16/95	8.960	mg/l		N/A
06/10/96	9.250	mg/l		N/A
10/22/96	9.090	mg/l		N/A
06/03/97	9.080	mg/l		N/A
11/04/97	9.530	mg/l		N/A
11/04/97 - Dup A	9.200	mg/l		N/A

Kruskal-Wallace Test
Report Printed: 02-19-1998 18:53

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:SO4 dis Sulfate, dissolved

CAS Number:14808-79-8
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	4	25	95.00	0.00	67.00	45.07
SIP-2	1	0	95.00	95.00	95.00	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	5	0	224.00	195.00	209.20	11.17
SIMW-3	6	0	140.00	131.00	134.67	3.93

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	95.0000	4.5
SIMW-1	06/10/96	0.0005	1.0
SIMW-1	06/03/97	92.0000	3.0
SIMW-1	11/04/97	81.0000	2.0
SIP-2	11/26/96	95.0000	4.5
			áááááááááááá
	Background Rank Sum:		15.0
	Background Rank Avg:		3.0
SIMW-2	08/16/95	224.0000	16.0
SIMW-2	06/10/96	195.0000	12.0
SIMW-2	10/22/96	214.0000	15.0
SIMW-2	06/03/97	202.0000	13.0
SIMW-2	11/04/97	211.0000	14.0
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	Compliance Well Rank Sum:		70.0
	Compliance Well Rank Avg:		14.0
SIMW-3	08/16/95	140.0000	11.0

SIMW-3	06/10/96	139.0000	10.0
SIMW-3	10/22/96	133.0000	8.0
SIMW-3	06/03/97	134.0000	9.0
SIMW-3	11/04/97	131.0000	6.5
SIMW-3	11/04/97	131.0000	6.5

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Compliance Well Rank Sum: 51.0
Compliance Well Rank Avg: 8.5

H Statistic: 13.3456
H Adjusted for Ties: 13.3850
Degrees of Freedom: 2
Chi-Squared: 5.9915
ZÃ/DF: 1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
*SIMW-2	5.8142	14.00	3.00	11.00
SIMW-3	5.5667	8.50	3.00	5.50

Kruskal-Wallace Test
Report Printed: 02-19-1998 19:00

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:SO4 dis Sulfate, dissolved

CAS Number:14808-79-8
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	3	0	95.00	81.00	89.33	7.37
SIP-2	1	0	95.00	95.00	95.00	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	5	0	224.00	195.00	209.20	11.17

SIMW-3	6	0	140.00	131.00	134.67	3.93

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	95.0000	3.5
SIMW-1	06/03/97	92.0000	2.0
SIMW-1	11/04/97	81.0000	1.0
SIP-2	11/26/96	95.0000	3.5

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Background Rank Sum: 10.0
Background Rank Avg: 2.5

SIMW-2	08/16/95	224.0000	15.0
SIMW-2	06/10/96	195.0000	11.0
SIMW-2	10/22/96	214.0000	14.0
SIMW-2	06/03/97	202.0000	12.0
SIMW-2	11/04/97	211.0000	13.0

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Compliance Well Rank Sum: 65.0
Compliance Well Rank Avg: 13.0

SIMW-3	08/16/95	140.0000	10.0
SIMW-3	06/10/96	139.0000	9.0
SIMW-3	10/22/96	133.0000	7.0
SIMW-3	06/03/97	134.0000	8.0
SIMW-3	11/04/97	131.0000	5.5
SIMW-3	11/04/97	131.0000	5.5

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Compliance Well Rank Sum: 45.0
Compliance Well Rank Avg: 7.5

H Statistic: 12.3750
H Adjusted for Ties: 12.4194
Degrees of Freedom: 2
Chi-Squared: 5.9915
ZÁ/DF: 1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
*SIMW-2	5.8799	13.00	2.50	10.50
SIMW-3	5.6579	7.50	2.50	5.00

Prediction Intervals
Report Printed: 02-19-1998 19:00

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:SO4 dis Sulfate, dissolved

CAS Number:14808-79-8
MCL: 0.000 mg/l
ACL: 0.000 mg/l

Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡^NÄ¡	08/16/95	95000.0000
¡^NÄ¡	11/26/96	95000.0000
¡^NÄ¡	06/03/97	92000.0000
¡^NÄ¡	11/04/97	81000.0000

Summary Statistics

Observations:	4
Mean:	90750.000
Std Dev:	6652.067
Shapiro-Wilk:	0.867

1% Critical Value: 0.687
5% Critical Value: 0.748

Future Data

Well:SIMW-2

Date	Observation
11/04/97	211000.0000

Summary Statistics

Observations: 1
Mean: 90750.000
Std Dev: 6652.067

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
*11/04/97-12/31/97	1	211000.000	[0.0- 108252.641]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Prediction Intervals
Report Printed: 02-19-1998 19:01

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:SO4 dis Sulfate, dissolved

CAS Number:14808-79-8
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡^NÄ¡	08/16/95	95000.0000

¡^NÄ¡	11/26/96	95000.0000
¡^NÄ¡	06/03/97	92000.0000
¡^NÄ¡	11/04/97	81000.0000

Summary Statistics

Observations:	4
Mean:	90750.000
Std Dev:	6652.067
Shapiro-Wilk:	0.867

1% Critical Value: 0.687
5% Critical Value: 0.748

Future Data

Well:SIMW-3

Date	Observation
11/04/97	131000.0000
11/04/97	131000.0000

Summary Statistics

Observations: 2
Mean: 90750.000
Std Dev: 6652.067

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
*11/04/97-12/31/97	2	131000.000	[0.0- 104307.492]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Kruskal-Wallace Test
Report Printed: 02-19-1998 19:01

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:Chld dis Chloride, dissolved

CAS Number:16887-00-6
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev

SIMW-1	3	0	26.00	24.00	25.00	1.00
SIP-2	1	0	28.00	28.00	28.00	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	5	0	63.00	47.00	57.00	6.44
SIMW-3	6	0	34.00	27.00	30.83	2.71

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	26.0000	3.0
SIMW-1	06/03/97	25.0000	2.0
SIMW-1	11/04/97	24.0000	1.0
SIP-2	11/26/96	28.0000	5.0
			áááááááááááá
	Background Rank Sum:		11.0
	Background Rank Avg:		2.8
SIMW-2	08/16/95	55.0000	12.0
SIMW-2	06/10/96	47.0000	11.0
SIMW-2	10/22/96	62.0000	14.0
SIMW-2	06/03/97	63.0000	15.0
SIMW-2	11/04/97	58.0000	13.0
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	Compliance Well Rank Sum:		65.0
	Compliance Well Rank Avg:		13.0
SIMW-3	08/16/95	34.0000	9.5
SIMW-3	06/10/96	30.0000	7.0
SIMW-3	10/22/96	34.0000	9.5
SIMW-3	06/03/97	27.0000	4.0
SIMW-3	11/04/97	30.0000	7.0
SIMW-3	11/04/97	30.0000	7.0
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	Compliance Well Rank Sum:		44.0
	Compliance Well Rank Avg:		7.3

H Statistic:	11.8958
H Adjusted for Ties:	12.0030
Degrees of Freedom:	2
Chi-Squared:	5.9915
ZÁ/DF:	1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
*SIMW-2	5.8799	13.00	2.75	10.25
SIMW-3	5.6579	7.33	2.75	4.58

Prediction Intervals
Report Printed: 02-19-1998 19:02

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:Chld dis Chloride, dissolved

CAS Number:16887-00-6
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡^NÄ¡	08/16/95	26000.0000
¡^NÄ¡	11/26/96	28000.0000
¡^NÄ¡	06/03/97	25000.0000
¡^NÄ¡	11/04/97	24000.0000

Summary Statistics

Observations: 4
Mean: 25750.000
Std Dev: 1707.825
Shapiro-Wilk: 1.091

1% Critical Value: 0.687
5% Critical Value: 0.748

Future Data

Well:SIMW-2

Date	Observation
11/04/97	58000.0000

Summary Statistics

Observations: 1
Mean: 25750.000
Std Dev: 1707.825

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
*11/04/97-12/31/97	1	58000.000	[0.0- 30243.559]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Prediction Intervals
Report Printed: 02-19-1998 19:02

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:Chld dis Chloride, dissolved

CAS Number:16887-00-6
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡^NÄ¡	08/16/95	26000.0000

¡^NÄ¡	11/26/96	28000.0000
¡^NÄ¡	06/03/97	25000.0000
¡^NÄ¡	11/04/97	24000.0000

Summary Statistics

Observations:	4
Mean:	25750.000
Std Dev:	1707.825
Shapiro-Wilk:	1.091

1% Critical Value: 0.687
5% Critical Value: 0.748

Future Data

Well:SIMW-3

Date	Observation
11/04/97	30000.0000
11/04/97	30000.0000

Summary Statistics

Observations: 2
Mean: 25750.000
Std Dev: 1707.825

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
*11/04/97-12/31/97	2	30000.000	[0.0- 29230.695]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Kruskal-Wallace Test
Report Printed: 02-19-1998 19:03

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:Cond Specific Conductivity

CAS Number: - -
MCL: 0.000 umhos/cm
ACL: 0.000 umhos/cm
Detect Limit: 1.000 umhos/cm

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Log Transformed

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev

SIMW-1	3	0	6.86	6.62	6.72	0.13
SIP-2	1	0	6.71	6.71	6.71	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	5	0	7.30	6.95	7.08	0.13
SIMW-3	6	0	6.79	6.53	6.63	0.09

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	6.8648	10.0
SIMW-1	06/03/97	6.6670	7.0
SIMW-1	11/04/97	6.6214	4.0
SIP-2	11/26/96	6.7117	8.0
		áááááááááááá	
	Background Rank Sum:		29.0
	Background Rank Avg:		7.3
SIMW-2	08/16/95	7.2998	15.0
SIMW-2	06/10/96	7.0733	13.5
SIMW-2	10/22/96	7.0733	13.5
SIMW-2	06/03/97	6.9470	11.0
SIMW-2	11/04/97	7.0121	12.0
		áááááááááááá	
	Compliance Well Rank Sum:		65.0
	Compliance Well Rank Avg:		13.0
SIMW-3	08/16/95	6.7946	9.0
SIMW-3	06/10/96	6.6201	3.0
SIMW-3	10/22/96	6.5596	2.0
SIMW-3	06/03/97	6.5265	1.0
SIMW-3	11/04/97	6.6425	5.5
SIMW-3	11/04/97	6.6425	5.5
		áááááááááááá	
	Compliance Well Rank Sum:		26.0
	Compliance Well Rank Avg:		4.3

H Statistic:	10.3958
H Adjusted for Ties:	10.4331
Degrees of Freedom:	2
Chi-Squared:	5.9915
ZÁ/DF:	1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
SIMW-2	5.8799	13.00	7.25	5.75
SIMW-3	5.6579	4.33	7.25	-2.92

Kruskal-Wallace Test
Report Printed: 02-19-1998 19:03

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:NO3/NO2 Nitrate,Nitrite

CAS Number: - -
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.000 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Log Transformed

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	4	0	1.72	1.32	1.50	0.17
SIP-2	1	0	0.58	0.58	0.58	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	5	0	1.43	0.75	1.17	0.30
SIMW-3	6	0	2.25	2.19	2.22	0.02

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	1.5019	9.0
SIMW-1	06/10/96	1.4446	8.0
SIMW-1	06/03/97	1.7156	10.0
SIMW-1	11/04/97	1.3191	4.0
SIP-2	11/26/96	0.5822	1.0
			áááááááááááá
	Background Rank Sum:		32.0
	Background Rank Avg:		6.4
SIMW-2	08/16/95	1.3297	5.0
SIMW-2	06/10/96	1.4303	7.0
SIMW-2	10/22/96	0.9555	3.0
SIMW-2	06/03/97	0.7467	2.0
SIMW-2	11/04/97	1.3737	6.0
			áááááááááááá
	Compliance Well Rank Sum:		23.0
	Compliance Well Rank Avg:		4.6
SIMW-3	08/16/95	2.1928	11.0
SIMW-3	06/10/96	2.2246	15.0
SIMW-3	10/22/96	2.2072	13.0
SIMW-3	06/03/97	2.2061	12.0
SIMW-3	11/04/97	2.2544	16.0
SIMW-3	11/04/97	2.2192	14.0
			áááááááááááá
	Compliance Well Rank Sum:		81.0
	Compliance Well Rank Avg:		13.5

H Statistic: 10.9456
H Adjusted for Ties: 10.9456
Degrees of Freedom: 2
Chi-Squared: 5.9915
ZÃ/DF: 1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
SIMW-2	5.8142	4.60	6.40	-1.80
*SIMW-3	5.5667	13.50	6.40	7.10

Prediction Intervals
Report Printed: 02-19-1998 19:05

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:NO3/NO2 Nitrate,Nitrite

CAS Number: - -
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.000 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡^NÄ¡	08/16/95	4490.0000
¡^NÄ¡	06/10/96	4240.0000
¡^NÄ¡	11/26/96	1790.0000
¡^NÄ¡	06/03/97	5560.0000
¡^NÄ¡	11/04/97	3740.0000

Summary Statistics

Observations: 5
Mean: 3964.000
Std Dev: 1385.327
Shapiro-Wilk: 0.932

1% Critical Value: 0.686
5% Critical Value: 0.762

Future Data

Well:SIMW-2

Date	Observation
11/04/97	3950.0000

Summary Statistics

Observations: 1
Mean: 3964.000
Std Dev: 1385.327

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
11/04/97-12/31/97	1	3950.000 [0.0-	7199.183]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Prediction Intervals
Report Printed: 02-19-1998 19:05

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:NO3/NO2 Nitrate,Nitrite

CAS Number: - -
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.000 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡^NÄ¡	08/16/95	4490.0000

¡^NÄ¡	06/10/96	4240.0000
¡^NÄ¡	11/26/96	1790.0000
¡^NÄ¡	06/03/97	5560.0000
¡^NÄ¡	11/04/97	3740.0000

Summary Statistics

Observations:	5
Mean:	3964.000
Std Dev:	1385.327
Shapiro-Wilk:	0.932

1% Critical Value: 0.686
5% Critical Value: 0.762

Future Data

Well:SIMW-3

Date	Observation
11/04/97	9530.0000
11/04/97	9200.0000

Summary Statistics

Observations: 2
Mean: 3964.000
Std Dev: 1385.327

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
*11/04/97-12/31/97	2	9365.000 [0.0-	6434.912]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Kruskal-Wallace Test
Report Printed: 02-19-1998 19:06

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:Se dis Selenium, dissolved

CAS Number: 7782-49-2
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev

SIMW-1	4	0	0.02	0.01	0.02	0.00
SIP-2	1	100	0.00	0.00	0.00	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	5	20	0.01	0.00	0.01	0.00
SIMW-3	6	17	0.02	0.00	0.02	0.01

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	0.0170	10.0
SIMW-1	06/10/96	0.0160	9.0
SIMW-1	06/03/97	0.0140	7.5
SIMW-1	11/04/97	0.0190	11.5
SIP-2	11/26/96	0.0005	2.0
		áááááááááá	
	Background Rank Sum:		40.0
	Background Rank Avg:		8.0
SIMW-2	08/16/95	0.0060	4.0
SIMW-2	06/10/96	0.0080	5.5
SIMW-2	10/22/96	0.0005	2.0
SIMW-2	06/03/97	0.0140	7.5
SIMW-2	11/04/97	0.0080	5.5
		áááááááááá	
	Compliance Well Rank Sum:		24.5
	Compliance Well Rank Avg:		4.9
SIMW-3	08/16/95	0.0210	13.0
SIMW-3	06/10/96	0.0220	14.0
SIMW-3	10/22/96	0.0190	11.5
SIMW-3	06/03/97	0.0005	2.0
SIMW-3	11/04/97	0.0230	15.5
SIMW-3	11/04/97	0.0230	15.5
		áááááááááá	
	Compliance Well Rank Sum:		71.5
	Compliance Well Rank Avg:		11.9

H Statistic:	6.0040
H Adjusted for Ties:	6.0665
Degrees of Freedom:	2
Chi-Squared:	5.9915
ZÁ/DF:	1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
SIMW-2	5.8142	4.90	8.00	-3.10
SIMW-3	5.5667	11.92	8.00	3.92

Kruskal-Wallace Test
Report Printed: 02-19-1998 19:06

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:DClDFlMe Dichlorodifluoromethane

CAS Number: 75-71-8
MCL: 0.000 ug/l
ACL: 0.000 ug/l
Detect Limit: 1.000 ug/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	4	0	0.68	0.53	0.61	0.07
SIP-2	1	0	1.30	1.30	1.30	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	6	50	0.50	0.18	0.36	0.15
SIMW-3	6	83	0.50	0.20	0.45	0.12

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	0.6500	15.0
SIMW-1	06/10/96	0.5800	14.0
SIMW-1	06/03/97	0.5300	13.0
SIMW-1	11/04/97	0.6800	16.0
SIP-2	11/26/96	1.3000	17.0
			áááááááááááá
	Background Rank Sum:		75.0
	Background Rank Avg:		15.0
SIMW-2	08/16/95	0.5000	4.5
SIMW-2	06/10/96	0.1800	9.0
SIMW-2	10/22/96	0.2300	11.0
SIMW-2	06/03/97	0.5000	4.5
SIMW-2	06/03/97	0.5000	4.5
SIMW-2	11/04/97	0.2600	12.0
			áááááááááááá
	Compliance Well Rank Sum:		45.5
	Compliance Well Rank Avg:		7.6
SIMW-3	08/16/95	0.2000	10.0
SIMW-3	06/10/96	0.5000	4.5
SIMW-3	10/22/96	0.5000	4.5
SIMW-3	06/03/97	0.5000	4.5
SIMW-3	11/04/97	0.5000	4.5
SIMW-3	11/04/97	0.5000	4.5
			áááááááááááá
	Compliance Well Rank Sum:		32.5
	Compliance Well Rank Avg:		5.4

H Statistic: 10.5523
H Adjusted for Ties: 11.7632
Degrees of Freedom: 2
Chi-Squared: 5.9915

ZÁ/DF: 1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
SIMW-2	5.9341	7.58	15.00	-7.42
SIMW-3	5.9341	5.42	15.00	-9.58

Kruskal-Wallace Test
Report Printed: 02-19-1998 19:06

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:1,1,1Tri 1,1,1-Trichloroethane

CAS Number: 71-55-6
MCL: 0.000 ug/l
ACL: 0.000 ug/l
Detect Limit: 1.000 ug/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	4	0	0.77	0.34	0.54	0.21
SIP-2	1	100	0.50	0.50	0.50	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	6	67	0.50	0.18	0.43	0.13
SIMW-3	6	83	0.54	0.50	0.51	0.02

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	0.6700	16.0
SIMW-1	06/10/96	0.3400	12.0
SIMW-1	06/03/97	0.7700	17.0
SIMW-1	11/04/97	0.4000	13.0
SIP-2	11/26/96	0.5000	5.5
			áááááááááááá
	Background Rank Sum:		63.5
	Background Rank Avg:		12.7

SIMW-2	08/16/95	0.5000	5.5
SIMW-2	06/10/96	0.1800	11.0
SIMW-2	10/22/96	0.5000	5.5
SIMW-2	06/03/97	0.5000	5.5
SIMW-2	06/03/97	0.5000	5.5
SIMW-2	11/04/97	0.4200	14.0

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Compliance Well Rank Sum: 47.0
Compliance Well Rank Avg: 7.8

SIMW-3	08/16/95	0.5400	15.0
SIMW-3	06/10/96	0.5000	5.5
SIMW-3	10/22/96	0.5000	5.5
SIMW-3	06/03/97	0.5000	5.5
SIMW-3	11/04/97	0.5000	5.5
SIMW-3	11/04/97	0.5000	5.5

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Compliance Well Rank Sum: 42.5
Compliance Well Rank Avg: 7.1

H Statistic: 3.8690
H Adjusted for Ties: 4.8496
Degrees of Freedom: 2
Chi-Squared: 5.9915
ZÁ/DF: 1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
SIMW-2	5.9341	7.83	12.70	-4.87
SIMW-3	5.9341	7.08	12.70	-5.62

Kruskal-Wallace Test
Report Printed: 02-19-1998 19:07

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:TClFlMe Trichlorofluoromethane

CAS Number: 75-69-4
MCL: 0.000 ug/l
ACL: 0.000 ug/l
Detect Limit: 1.000 ug/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	4	0	0.49	0.33	0.42	0.07
SIP-2	1	0	0.32	0.32	0.32	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	6	50	0.50	0.15	0.33	0.18
SIMW-3	6	83	0.50	0.17	0.44	0.13

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	0.4900	17.0
SIMW-1	06/10/96	0.4000	15.0
SIMW-1	06/03/97	0.4700	16.0
SIMW-1	11/04/97	0.3300	14.0
SIP-2	11/26/96	0.3200	13.0
		áááááááááááá	
	Background Rank Sum:		75.0
	Background Rank Avg:		15.0
SIMW-2	08/16/95	0.5000	4.5
SIMW-2	06/10/96	0.1600	10.0
SIMW-2	10/22/96	0.1500	9.0
SIMW-2	06/03/97	0.5000	4.5
SIMW-2	06/03/97	0.5000	4.5
SIMW-2	11/04/97	0.2000	12.0
		áááááááááááá	
	Compliance Well Rank Sum:		44.5
	Compliance Well Rank Avg:		7.4
SIMW-3	08/16/95	0.1700	11.0
SIMW-3	06/10/96	0.5000	4.5
SIMW-3	10/22/96	0.5000	4.5
SIMW-3	06/03/97	0.5000	4.5
SIMW-3	11/04/97	0.5000	4.5
SIMW-3	11/04/97	0.5000	4.5
		áááááááááááá	
	Compliance Well Rank Sum:		33.5
	Compliance Well Rank Avg:		5.6

H Statistic:	10.3954
H Adjusted for Ties:	11.5883
Degrees of Freedom:	2
Chi-Squared:	5.9915
ZÁ/DF:	1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
SIMW-2	5.9341	7.42	15.00	-7.58
SIMW-3	5.9341	5.58	15.00	-9.42

GROUND WATER DATA BASE PRINTOUT

FACILITY: Sanitation, Inc.,Lewistown,MT WELL: SIMW-1
FCID: D&A160 NUMBER OF SAMPLE DATES: 4
PARAMETER: Dichlorodifluoromethane

DATE	RESULT	UNITS	DATA QUAL	METHOD

08/16/95	0.650	ug/l	j	8260
06/10/96	0.580	ug/l		8260
06/03/97	0.530	ug/l	j	8260
11/04/97	0.680	ug/l	j	8260

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
E-MAIL eli@energylab.com • FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-69859 lm
Date : 12/10/97

RECEIVED
DEC 15 1997
DAMSCHEN & ASSOCIATES

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SIMW-1

Sample Date : 11/04/97
Sample Time : 0945
Sample Received : 11/10/97

Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Potassium	2	mg/l		EPA	200.7	11/11/97	1626	RLH
Sodium	18	mg/l		EPA	200.7	11/11/97	1626	RLH
Calcium	106	mg/l		EPA	200.7	11/11/97	1626	RLH
Magnesium	36	mg/l		EPA	200.7	11/11/97	1626	RLH
Sulfate	81	mg/l		EPA	300.0	11/12/97	1729	SKW
Chloride	24	mg/l		EPA	300.0	11/12/97	1729	SKW
Carbonate as CO3	0	mg/l		EPA	310.1	11/13/97	0750	SKW
Bicarbonate as HCO3	409	mg/l		EPA	310.1	11/13/97	0750	SKW
Solids Dissolved @ 180 degrees C	472	mg/l		EPA	160.1	11/13/97	1008	CAV/SKW
Alkalinity,Total as CaCO3,pH 4.5	335	mg/l		EPA	310.1	11/13/97	0750	SKW
Conductivity, @ 25 degrees C	751	µmhos/cm		EPA	120.1	11/10/97	1538	QED
pH @ 25 degrees C	7.3	s.u.		EPA	150.1	11/10/97	1538	QED
Nitrate plus Nitrite as N	3.74	mg/l		EPA	353.2	11/12/97	1644	BAS
Nitrogen,Ammonia	<0.1	mg/l		EPA	350.1	11/12/97	1644	BAS
Chemical Oxygen Demand	2	mg/l		EPA	410.4	11/12/97	1115	BS
Cyanide, Total	<0.005	mg/l		EPA	335.3	11/12/97	0900	ND
Antimony, Dissolved	<0.05	mg/l		EPA	200.7	11/11/97	1626	RLH
Arsenic,Dissolved	<0.005	mg/l		EPA	200.8	11/14/97	2135	LH
Barium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1626	RLH
Beryllium, Dissolved	<0.001	mg/l		EPA	200.7	11/11/97	1626	RLH
Cadmium,Dissolved	<0.001	mg/l		EPA	200.8	11/14/97	2135	LH
Chromium,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1626	RLH
Cobalt, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1626	RLH
Copper,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1626	RLH
Iron,Dissolved	<0.03	mg/l		EPA	200.7	11/11/97	1626	RLH
Lead,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1626	RLH
Mercury, Dissolved	<0.001	mg/l		EPA	200.8	11/14/97	2135	LH
Nickel, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1626	RLH
Selenium, Dissolved	0.019	mg/l		EPA	200.8	11/14/97	2135	LH
Silver, Dissolved	<0.005	mg/l		EPA	200.7	11/11/97	1626	RLH

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-69859 lm
Date : 12/10/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SIMW-1

Sample Date : 11/04/97
Sample Time : 0945
Sample Received : 11/10/97

Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Thallium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1626	RLH
Vanadium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1626	RLH
Zinc, Dissolved	0.02	mg/l		EPA	200.7	11/11/97	1626	RLH

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Client: Damschen and Associates, Inc.
Date Sampled: 04-NOV-97 09:45
Date Received: 10-NOV-97
Analysis Date: 16-NOV-1997 23:53
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: SIMW-1

Lab No.: 97-69859
Report Date: 11/17/97 10:40
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	**75-71-8**	**<1.0**	**0.68J**
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	**71-55-6**	**<1.0**	**0.40J**
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	**75-69-4**	**<1.0**	**0.33J**
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	11.6	116	80--120
Toluene d8	10.0	9.85	98	80--120
p-Bromofluorobenzene	10.0	9.67	97	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: RAP Reviewing Supervisor: MZ /IONTRAP1.i/vb111697.b/17nov16.d

Client: Dominion and Associates, Inc.
Date Sampled: 04-NOV-97 09:42
Date Received: 14-NOV-97
Analysis Date: 24-NOV-1997 12:13
Sample Matrix: WATER
Extraction Method: EPA 8015
Report Date: 12/13/97 10:44
Page 2 of 2

EPA METHOD 8015M: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

Parameter	CAS NO.	Result	Qualifiers
Acetone	67-64-1	<10	U
Acrylonitrile	107-13-1	<10	U
Benzene	71-43-2	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform (Tribromomethane)	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
2-Butanone	78-93-3	<10	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<5.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<10	U
Iodomethane	74-88-4	<1.0	U
Isopropyl benzene	98-82-8	<1.0	U
Methyl ethyl ketone	78-93-3	<10	U
Methyl isobutyl ketone	108-10-1	<10	U
Methyl tert butyl ether	1634-04-4	<1.0	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m,p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate (recovered)	Expected Conc.	Measured Conc.	%Rec.	QC Limits
1,1,1-Trichloroethane-d3	10.0	9.72	97	80-120
Toluene-d8	10.0	9.88	99	80-120
4-Br fluorobenzene	10.0	9.69	97	80-120

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LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-69860 lm
Date : 12/10/97

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WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SIMW-2

Sample Date : 11/04/97
Sample Time : 1030
Sample Received : 11/10/97

Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Potassium	3	mg/l		EPA	200.7	11/11/97	1630	RLH
Sodium	50	mg/l		EPA	200.7	11/11/97	1630	RLH
Calcium	142	mg/l		EPA	200.7	11/11/97	1630	RLH
Magnesium	51	mg/l		EPA	200.7	11/11/97	1630	RLH
Sulfate	211	mg/l		EPA	300.0	11/12/97	1742	SKW
Chloride	58	mg/l		EPA	300.0	11/12/97	1742	SKW
Carbonate as CO3	0	mg/l		EPA	310.1	11/13/97	0800	SKW
Bicarbonate as HCO3	461	mg/l		EPA	310.1	11/13/97	0800	SKW
Solids Dissolved @ 180 degrees C	742	mg/l		EPA	160.1	11/13/97	0810	CAV/SKW
Alkalinity,Total as CaCO3,pH 4.5	378	mg/l		EPA	310.1	11/13/97	0800	SKW
Conductivity, @ 25 degrees C	1110	µmhos/cm		EPA	120.1	11/10/97	1539	QED
pH @ 25 degrees C	7.3	s.u.		EPA	150.1	11/10/97	1539	QED
Nitrate plus Nitrite as N	3.95	mg/l		EPA	353.2	11/12/97	1645	BAS
Nitrogen,Ammonia	<0.1	mg/l		EPA	350.1	11/12/97	1645	BAS
Chemical Oxygen Demand	8	mg/l		EPA	410.4	11/13/97	1115	BS
Cyanide, Total	<0.005	mg/l		EPA	335.3	11/12/97	0900	ND
Antimony, Dissolved	<0.05	mg/l		EPA	200.8	11/14/97	2141	LH
Arsenic,Dissolved	<0.005	mg/l		EPA	200.8	11/14/97	2141	LH
Barium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1630	RLH
Beryllium, Dissolved	<0.001	mg/l		EPA	200.7	11/11/97	1630	RLH
Cadmium,Dissolved	<0.001	mg/l		EPA	200.8	11/14/97	2141	LH
Chromium,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1630	RLH
Cobalt, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1630	RLH
Copper,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1630	RLH
Iron,Dissolved	<0.03	mg/l		EPA	200.7	11/11/97	1630	RLH
Lead,Dissolved	<0.01	mg/l		EPA	200.8	11/14/97	2141	LH
Mercury, Dissolved	<0.001	mg/l		EPA	200.8	11/14/97	2141	LH
Nickel, Dissolved	<0.01	mg/l		EPA	200.8	11/14/97	2141	LH
Selenium, Dissolved	0.008	mg/l		EPA	200.8	11/14/97	2141	LH
Silver, Dissolved	<0.005	mg/l		EPA	200.8	11/14/97	2141	LH

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-69860 lm
Date : 12/10/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SIMW-2

Sample Date : 11/04/97
Sample Time : 1030
Sample Received : 11/10/97

Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Thallium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1630	RLH
Vanadium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1630	RLH
Zinc, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1630	RLH

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Client: Damschen and Associates, Inc.
Date Sampled: 04-NOV-97 10:30
Date Received: 10-NOV-97
Analysis Date: 17-NOV-97 00:32
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: SIMW-2

Lab No.: 97-69860
Report Date: 11/17/97 10:41
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	**75-71-8**	**<1.0**	**0.26J**
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	**71-55-6**	**<1.0**	**0.42J**
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	**75-69-4**	**<1.0**	**0.20J**
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	11.5	115	80--120
Toluene d8	10.0	10.0	100	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: [illegible] Reviewing Supervisor: [illegible] /IONTRAP1.i/vb111697.b/18nov16.d

ENERGY LABORATORIES, INC.
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LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-69861 lm
Date : 12/10/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SIMW-3

Sample Date : 11/04/97
Sample Time : 1145
Sample Received : 11/10/97

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Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Potassium	2	mg/l		EPA	200.7	11/11/97	1634	RLH
Sodium	24	mg/l		EPA	200.7	11/11/97	1634	RLH
Calcium	92	mg/l		EPA	200.7	11/11/97	1634	RLH
Magnesium	32	mg/l		EPA	200.7	11/11/97	1634	RLH
Sulfate	131	mg/l		EPA	300.0	11/12/97	1754	SKW
Chloride	30	mg/l		EPA	300.0	11/12/97	1754	SKW
Carbonate as CO3	0	mg/l		EPA	310.1	11/13/97	0810	SKW
Bicarbonate as HCO3	255	mg/l		EPA	310.1	11/13/97	0810	SKW
Solids Dissolved @ 180 degrees C	463	mg/l		EPA	160.1	11/13/97	1008	CAV/SKW
Alkalinity,Total as CaCO3,pH 4.5	209	mg/l		EPA	310.1	11/13/97	0810	SKW
Conductivity, @ 25 degrees C	767	µmhos/cm		EPA	120.1	11/10/97	1543	QED
pH @ 25 degrees C	7.7	s.u.		EPA	150.1	11/10/97	1543	QED
Nitrate plus Nitrite as N	9.53	mg/l		EPA	353.2	11/12/97	1710	BAS
Nitrogen,Ammonia	<0.1	mg/l		EPA	350.1	11/12/97	1646	BAS
Chemical Oxygen Demand	6	mg/l		EPA	410.4	11/13/97	1115	BS
Cyanide, Total	<0.005	mg/l		EPA	335.3	11/12/97	0900	ND
Antimony, Dissolved	<0.05	mg/l		EPA	200.7	11/11/97	1634	RLH
Arsenic,Dissolved	<0.005	mg/l		EPA	200.8	11/14/97	2147	LH
Barium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1634	RLH
Beryllium, Dissolved	<0.001	mg/l		EPA	200.7	11/11/97	1634	RLH
Cadmium,Dissolved	<0.001	mg/l		EPA	200.8	11/14/97	2147	LH
Chromium,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1634	RLH
Cobalt, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1634	RLH
Copper,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1634	RLH
Iron,Dissolved	<0.03	mg/l		EPA	200.7	11/11/97	1634	RLH
Lead,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1634	RLH
Mercury, Dissolved	<0.001	mg/l		EPA	200.8	11/14/97	2147	LH
Nickel, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1634	RLH
Selenium, Dissolved	0.023	mg/l		EPA	200.8	11/14/97	2147	LH
Silver, Dissolved	<0.005	mg/l		EPA	200.7	11/11/97	1634	RLH

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-69861 lm
Date : 12/10/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SIMW-3

Sample Date : 11/04/97
Sample Time : 1145
Sample Received : 11/10/97

Constituents	Results	Units	Re-marks	Ref.	Method	--Analysis-- Date	Time	By
Thallium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1634	RLH
Vanadium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1634	RLH
Zinc, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1634	RLH

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Client: Damschen and Associates, Inc.
Date Sampled: 04-NOV-97 11:45
Date Received: 10-NOV-97
Analysis Date: 17-NOV-97 01:12
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: SIMW-3

Lab No.: 97-69861
Report Date: 11/17/97 10:43
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	11.7	117	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CAP Reviewing Supervisor: MB /IONTRAP1.i/vb111697.b/19nov16.d

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LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-69862 lm
Date : 12/10/97

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WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SIMW-3D

Sample Date : 11/04/97
Sample Time : 1145
Sample Received : 11/10/97

Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Potassium	2	mg/l		EPA	200.7	11/11/97	1636	RLH
Sodium	24	mg/l		EPA	200.7	11/11/97	1636	RLH
Calcium	93	mg/l		EPA	200.7	11/11/97	1636	RLH
Magnesium	33	mg/l		EPA	200.7	11/11/97	1636	RLH
Sulfate	131	mg/l		EPA	300.0	11/12/97	1830	SKW
Chloride	30	mg/l		EPA	300.0	11/12/97	1830	SKW
Carbonate as CO3	0	mg/l		EPA	310.1	11/13/97	0815	SKW
Bicarbonate as HCO3	255	mg/l		EPA	310.1	11/13/97	0815	SKW
Solids Dissolved @ 180 degrees C	479	mg/l		EPA	160.1	11/13/97	1022	CAV/SKW
Alkalinity,Total as CaCO3,pH 4.5	209	mg/l		EPA	310.1	11/13/97	0815	SKW
Conductivity, @ 25 degrees C	767	µmhos/cm		EPA	120.1	11/10/97	1544	QED
pH @ 25 degrees C	7.7	s.u.		EPA	150.1	11/10/97	1544	QED
Nitrate plus Nitrite as N	9.20	mg/l		EPA	353.2	11/12/97	1711	BAS
Nitrogen,Ammonia	<0.1	mg/l		EPA	350.1	11/12/97	1647	BAS
Chemical Oxygen Demand	7	mg/l		EPA	410.4	11/13/97	1115	BS
Cyanide, Total	<0.005	mg/l		EPA	335.3	11/12/97	0900	ND
Antimony, Dissolved	<0.05	mg/l		EPA	200.7	11/11/97	1636	RLH
Arsenic,Dissolved	<0.005	mg/l		EPA	200.8	11/14/97	2153	LH
Barium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1636	RLH
Beryllium, Dissolved	<0.001	mg/l		EPA	200.7	11/11/97	1636	RLH
Cadmium,Dissolved	<0.001	mg/l		EPA	200.8	11/14/97	2153	LH
Chromium,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1636	RLH
Cobalt, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1636	RLH
Copper,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1636	RLH
Iron,Dissolved	<0.03	mg/l		EPA	200.7	11/11/97	1636	RLH
Lead,Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1636	RLH
Mercury, Dissolved	<0.001	mg/l		EPA	200.8	11/14/97	2153	LH
Nickel, Dissolved	<0.01	mg/l		EPA	200.7	11/11/97	1636	RLH
Selenium, Dissolved	0.023	mg/l		EPA	200.8	11/14/97	2153	LH
Silver, Dissolved	<0.005	mg/l		EPA	200.7	11/11/97	1636	RLH

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-69862 lm
Date : 12/10/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SIMW-3D

Sample Date : 11/04/97
Sample Time : 1145
Sample Received : 11/10/97

Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Thallium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1636	RLH
Vanadium, Dissolved	<0.1	mg/l		EPA	200.7	11/11/97	1636	RLH
Zinc, Dissolved	0.01	mg/l		EPA	200.7	11/11/97	1636	RLH

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Client: Damschen and Associates, Inc.
Date Sampled: 04-NOV-97 11:45
Date Received: 10-NOV-97
Analysis Date: 17-NOV-97 01:52
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: SIMW-3D

Lab No.: 97-69862
Report Date: 11/17/97 10:44
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	11.5	115	80--120
Toluene d8	10.0	10.2	102	80--120
p-Bromofluorobenzene	10.0	10.7	107	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: RAP Reviewing Supervisor: MB /IONTRAP1.i/vb111697.b/20nov16.d

ENERGY LABORATORIES, INC.

[illegible]

[illegible]

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

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Client: Damschen and Associates, Inc.
Date Sampled:
Date Received: 10-NOV-97
Analysis Date: 20-NOV-97 18:36
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: Trip Blank

Lab No.: 97-69863
Report Date: 11/21/97 10:41
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.80	98	80--120
Toluene d8	10.0	9.74	97	80--120
p-Bromofluorobenzene	10.0	9.97	100	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: RAF Reviewing Supervisor: [illegible] /IONTRAP1.i/vb112097.b/14nov20.d

Quality Control Sample: Laboratory Reagent Blank 16-NOV-97 23:13
Report Date: 11/17/97 10:36
Extraction Method: EPA 5030
Sample Matrix: WATER
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	11.5	115	80--120
Toluene d8	10.0	10.2	102	80--120
p-Bromofluorobenzene	10.0	9.87	99	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: [illegible] Reviewing Supervisor: [illegible] /IONTRAP1.i/vb111697.b/16nov16.d

Quality Control Section, Laboratory Treatment Plant, 12-NOV-93 13:13
Report Date: 11/12/93 16:13
Analysis Method: EPA 1030
Sample Matrix: WATER

Comments: This laboratory Analyst Blank Quality Control Sample was analyzed and analyzed and analyzed. This set of samples no analysis no analysis is method analysis or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

Compound	Concentration Units - ug/L (ppb) CAS NO.	Result	Qual. Code
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<40	U
Benzene	71-43-2	<0.5	U
Bromobenzene	108-86-1	<5	U
Bromochloromethane	74-97-5	<0.5	U
Bromodichloromethane	75-27-4	<0.5	U
Bromoform	75-25-2	<0.5	U
Bromomethane	74-83-9	<1	U
2-Butanone	78-93-3	<5	U
n-Butylbenzene	104-51-8	<0.5	U
sec-Butylbenzene	135-98-8	<0.5	U
tert-Butylbenzene	98-06-6	<0.5	U
Carbon disulfide	75-15-0	<1	U
Carbon tetrachloride	56-23-5	<0.5	U
Chlorobenzene	108-90-7	<0.5	U
Chloroethane	75-00-3	<1	U
2-Chloroethylvinylether	110-75-8	<5	U
Chloroform	67-66-3	<0.5	U
Chloromethane	74-87-3	<1	U
2-Chlorotoluene	95-49-8	<0.5	U
4-Chlorotoluene	106-43-4	<0.5	U
Dibromochloromethane	124-48-1	<0.5	U
1,2-Dibromo-3-chloropropane	96-12-8	<5	U
Dibromomethane	74-95-3	<0.5	U
1,2-Dichlorobenzene	95-50-1	<0.5	U
1,3-Dichlorobenzene	541-73-1	<0.5	U
1,4-Dichlorobenzene	106-46-7	<0.5	U
Dichlorodifluoromethane	75-71-8	<1	U
1,1-Dichloroethane	75-34-3	<0.5	U
1,2-Dichloroethane	107-06-2	<0.5	U
1,1-Dichloroethylene	75-35-4	<0.5	U
cis-1,2-Dichloroethylene	156-59-2	<0.5	U
trans-1,2-Dichloroethylene	156-60-5	<0.5	U
1,2-Dichloropropane	78-87-5	<0.5	U
1,3-Dichloropropane	142-28-9	<0.5	U
2,2-Dichloropropane	594-20-7	<0.5	U
1,1-Dichloropropene	563-58-6	<0.5	U
cis-1,3-Dichloropropene	10061-01-5	<0.5	U
trans-1,3-Dichloropropene	10061-02-6	<0.5	U
Ethyl benzene	100-41-4	<0.5	U
2-Hexanone	591-78-6	<5	U
Hexachlorobutadiene	87-68-3	<0.5	U
Isopropyl benzene	98-82-8	<0.5	U
4-Isopropyltoluene	99-87-6	<0.5	U
Methyl iodide	74-88-4	<1	U
4-Methyl-2-pentanone	108-10-1	<5	U
Methyl ethyl ketone	78-93-3	<5	U
Methyl isobutyl ketone	108-10-1	<5	U
Methylene chloride	75-09-2	<0.5	U
Naphthalene	91-20-3	<5	U
n-Propylbenzene	103-65-1	<0.5	U
Styrene	100-42-5	<0.5	U
1,1,1,2-Tetrachloroethane	630-20-6	<0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.5	U
Tetrachloroethylene	127-18-4	<0.5	U
Toluene	108-88-3	<0.5	U
1,2,3-Trichlorobenzene	87-61-6	<5	U
1,2,4-Trichlorobenzene	120-82-1	<5	U
1,1,1-Trichloroethane	71-55-6	<0.5	U
1,1,2-Trichloroethane	79-00-5	<0.5	U
Trichloroethylene	79-01-6	<0.5	U
Trichlorofluoromethane	75-69-4	<1	U
1,2,3-Trichloropropane	96-18-4	<5	U
1,2,4-Trimethylbenzene	95-63-6	<0.5	U
1,3,5-Trimethylbenzene	108-67-8	<0.5	U
Vinyl acetate	108-05-4	<5	U
Vinyl chloride	75-01-4	<1	U
Xylene (total)	1330-20-7	<0.5	U
m,p-Xylene	108-38-3	<0.5	U
o-Xylene	95-47-6	<0.5	U

SURROGATE RECOVERY REPORT

Compound	Added	Recovered	Spike % Recovery	QC Limits
Dibromofluoromethane	0.50	0.47	94	86-118
1,2-Dichloroethane-d4	0.50	0.52	104	85-115
Toluene-d8	0.50	0.47	94	88-110
4-Bromofluorobenzene	0.50	0.47	94	86-115

Lab No(s). 97-69859 - 97-69862

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Constituents		Duplicate Analysis --- mg/l (ppm) --- Original	Duplicate	Spiked Analysis % Recovery	Blank Analysis, mg/l ppm	------ Reference ------ Sample Analysis, mg/l ppm	Accept Range mg/l ppm	Date Analyzed
Potassium		2	2	95	<1	55	45 - 55	11-NOV-97
Sodium		18	18	96	<1	55	45 - 55	11-NOV-97
Calcium		106	105	105	<1	49	45 - 55	11-NOV-97
Magnesium		36	36	96	<1	51	45 - 55	11-NOV-97
Sulfate		131	131	98	<1	124	112-138	12-NOV-97
Chloride		30	30	96	<1	25	22-28	12-NOV-97
Total Dissolved Solids		742	742	100	<10	N/A	N/A	13-NOV-97
Alkalinity		335	333	83	1	105	85-115	13-NOV-97
Specific Conductance @ 25	umhos/cm	1110	1120	N/A	1	N/A	N/A	10-NOV-97
pH	s.u.	7.3	7.3	N/A	N/A	N/A	N/A	10-NOV-97
Ammonia as N		<0.1	<0.1	98	<0.1	1.9	1.6-2.2	12-NOV-97
Nitrate plus Nitrite as N		<0.05	<0.05	105	<0.05	2.29	2.04-2.56	12-NOV-97
Total Cyanide		<0.005	<0.005	90	<0.005	0.222	0.139-0.271	12-NOV-97
Chemical Oxygen Demand		8	7	104	<1	40	23-43	13-NOV-97
Dissolved Metals								
Antimony		<0.05	<0.05	91	<0.05	0.96	0.90 - 1.10	11-NOV-97
Arsenic		<0.005	<0.005	111	<0.005	0.047	0.045 - 0.055	14-NOV-97
Barium		<0.1	<0.1	90	<0.1	0.9	0.9 - 1.1	11-NOV-97
Beryllium		<0.001	<0.001	91	<0.001	0.193	0.180 - 0.220	11-NOV-97
Cadmium		<0.001	<0.001	102	<0.001	0.047	0.045 - 0.055	14-NOV-97
Chromium		<0.01	<0.01	95	<0.01	0.99	0.90 - 1.10	11-NOV-97
Cobalt		<0.01	<0.01	94	<0.01	0.96	0.90 - 1.10	11-NOV-97
Copper		<0.01	<0.01	93	<0.01	0.96	0.90 - 1.10	11-NOV-97
Iron		<0.03	<0.03	93	<0.03	4.85	4.50 - 5.50	11-NOV-97
Lead		<0.01	<0.01	96	<0.01	1.00	0.90 - 1.10	11-NOV-97
Mercury		<0.001	<0.001	89	<0.001	0.004	0.004 - 0.006	14-NOV-97
Nickel		<0.01	<0.01	91	<0.01	0.95	0.90 - 1.10	11-NOV-97
Selenium		<0.005	<0.005	117	<0.005	0.050	0.045 - 0.055	14-NOV-97
Silver		<0.005	<0.005	88	<0.005	0.184	0.180 - 0.220	11-NOV-97
Thallium		<0.1	<0.1	93	<0.1	1.0	0.9 - 1.1	11-NOV-97
Vanadium		<0.1	<0.1	103	<0.1	1.1	0.9 - 1.1	11-NOV-97
Zinc		0.02	0.02	90	<0.01	0.93	0.90 - 1.10	11-NOV-97

EPA METHOD 8260A: QUALITY ASSURANCE BLANK MATRIX SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 16-NOV-97 22:34
Report Date: 11/17/97 10:26
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /IONTRAP1.i/vb111697.b/15nov16.d
Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	4.79	96	60--140
Chlorobenzene	5.00	4.70	94	60--140
1,3-Dichlorobenzene	5.00	4.78	96	60--140
1,4-Dichlorobenzene	5.00	5.12	102	60--140
1,2-Dichloroethane	5.00	4.50	90	60--140
1,1-Dichloroethene	5.00	5.20	104	60--140
trans-1,2-Dichloroethene	5.00	5.10	102	60--140
1,2-Dichloropropane	5.00	4.70	94	60--140
Ethyl benzene	5.00	4.93	99	60--140
Tetrachloroethene	5.00	4.93	99	60--140
1,1,2-Trichloroethane	5.00	4.49	90	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	11.5	115	80--120
Toluene d8	10.0	9.83	98	80--120
p-Bromofluorobenzene	10.0	9.94	99	80--120

REPORT COMMENTS: None

Analyst: RAP Reviewing Supervisor: MJP

EPA METHOD 8260A: QUALITY ASSURANCE MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 05-DEC-1997 12:40
Lab No.: 97-69860
Report Date: 12/05/97 13:50
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /IONTRAP1.i/vb120597.b/04dec05.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Benzene	5.00	<1.00	5.22	104	60--140
Chlorobenzene	5.00	<1.00	4.83	97	60--140
1,1-Dichloroethene	5.00	<1.00	4.59	92	60--140
Toluene	5.00	<1.00	5.53	111	60--140
Trichloroethene	5.00	<1.00	4.92	98	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	20.0	17.9	89	80--120
Toluene d8	20.0	20.4	102	80--120
p-Bromofluorobenzene	20.0	20.1	101	80--120

EPA METHOD 8260A: QUALITY ASSURANCE MATRIX SPIKE DUPLICATE REPORT

Quality Control Sample: Matrix Spike Duplicate Analysis 05-DEC-1997 13:18
Lab No.: 97-69860
File: /IONTRAP1.i/vb120597.b/05dec05.d
Remarks: These compounds were again spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD %Rec	%RPD	---QC Limits-- RPD	Rec
Benzene	5.00	5.03	101	3	11	60--140
Chlorobenzene	5.00	4.83	97	1	13	60--140
1,1-Dichloroethene	5.00	4.47	89	2	14	60--140
Toluene	5.00	5.56	111	1	13	60--140
Trichloroethene	5.00	4.60	92	6	14	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	20.0	18.6	93	80--120
Toluene d8	20.0	20.2	101	80--120
p-Bromofluorobenzene	20.0	20.8	104	80--120

REPORT COMMENTS: None

Analyst: KAP Reviewing Supervisor: MM

Lab Nos.: 97-69859 - 97-69863

Date: 10-NOV-97

Received by: Randa Hoelscher

Logged In by: Randa Hoelscher

SAMPLE CONDITION QA/QC REPORT

This report provides information about the condition of the sample(s) and associated sample custody information on receipt at the laboratory.

Chain of Custody Form Completed & Signed	Yes	Comments:
Chain of Custody Seal	Yes	Comments:
Intact	Yes	Comments:
Signature Match Chain of Custody vs. Seal	Yes	Comments:
Samples Received Cold	Yes	Comments:
Samples Received Within Holding Time	Yes	Comments:
Samples Received in Proper Containers	Yes	Comments:
Samples Received Properly Preserved	Yes	Comments:

Samples requiring analysis for volatile organics are tested for proper preservation at the time of analysis. Any preservation problems encountered for these samples are noted on the analytical parameter report pages.

Client notified about sample discrepancies:

Who: Bruce Siegmund By: Randa Hoelscher Date/Time: 10-NOV-97 1340

Method of Shipping: UPS

Additional comments: Drinking water is the Domestic list of parameters.

ENERGY LABORATORIES, INC
P.O. Box 30916 1120 South 27th Street
Billings, Montana 59107
toll-free 800-735-4489
voice 406-252-6325
fax 406-252-6069

CHAIN OF CUSTODY RECORD

PLEASE PRINT OR TYPE ALL INFORMATION EXCEPT SIGNATURES

P.O. #

Project Name / Address: SANITATION, INC LANDFILL, LEWISTOWN, MT

Contact Name & Phone: BRUCE SIEGMUND 449-8627

Sampler's signature: Bruce Siegmund

Invoice to: DAMSCHEN + ASSOC. PO Box 4817 HELENA MT

Report to: D+A

DATE	TIME	composite	grab sample	SAMPLE I.D.	number of containers / Sample Type: A W S V U O / Air Water Soils/solids Vegetation Urine Other	MT SOLID WASTE TABLE 1 + DICHLORODIFLUOROMETHANE	AMMONIA N	DRINKING WATER (Nitrate)						Comments, Special Instructions, etc.
11/4/97	945		x	SIMW-1	6 W	x	x	x						
"	1030		x	SIMW-2	6 W	x	x	x						
"	1145		x	SIMW-3	6 W	x	x	x						
"	1145		x	SIMW-3 D	6 W	x	x	x						
				TRIP BLANK	1 W									

1. Relinquished (signature)	Date	Time	Received by: (signature)	3. Relinquished (signature)	Date	Time	Received by (signature):
Bruce Siegmund	11/7/97	1630					

2. Relinquished (signature)	Date	Time	Received by: (signature)	4. Relinquished (signature)	Date	Time	Received for laboratory by (signature):
					11/10/97	1330	Sanda Voelscher

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number SANITATION INC Well Number S1MW-1

Sampler(s) [illegible]

Date 11/4/97 Time 945

Conditions 40° CLOUDY SHOWERS

Field Data: Table (circle) (1) 2

Depth to Water 45.45 Total Depth 47.75

Volume of Water Purged

Temperature--#1 --#2 --#3 --#4

Conductivity--#1 --#2 --#3 --#4

pH--#1 --#2 --#3 --#4

Recovery: h_1 0.00 h_2 0.01 time 31 sec @ 47.3'

Sample Preservatives:

1000 ml, 6, w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow) X
250 ml w/ HNO_3 (red), filtered
250 ml w/ NaOH (green)
500 ml w/ no preservative
40 ml, 2, w/ HCl (blue)

Comments (attach change of instrumentation information to this sheet if necessary):

DAMMCHOLZ & ASSOCIATES, INC.
Landfill Owned Water Monitoring Field Sheet

Project Name/Number _____ Well Number _____

Sampler(s) _____

Date _____ Time _____

Conditions _____

Total Depth _____ Table Grade? _____

Depth to Water _____ Total Depth _____

Volume of Water Purged _____

Temperature-#1 _____ -#2 _____ -#3 _____ -#4 _____

Conductivity-#1 _____ -#2 _____ -#3 _____ -#4 _____

pH-#1 _____ -#2 _____ -#3 _____ -#4 _____

Recovery: % _____ % _____ time _____

Sample Preservatives:
(500 ml, 0, w/ no preservative _____
250 ml w/ H_2SO_4 (yellow) _____
250 ml w/ HNO_3 (red), filtered _____
250 ml w/ NaOH (green) _____
500 ml w/ no preservative _____
40 ml, 2, w/ HCl (blue) _____

Comments (note a change of instrument, other information to the sheet if necessary)

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number ST Well Number SIMW-2

Sampler(s) BS

Date 11/4/97 Time 1030

Conditions

Field Data: Table (circle) 1 2

Depth to Water 35.65 Total Depth 42.5

Volume of Water Purged ~1 GAL

LAST PURGE BAILER POSTPURGE

Temperature--#1 --#2 --#3 --#4

Conductivity--#1 1269 --#2 1228 --#3 --#4

pH--#1 9.22 --#2 8.85 --#3 --#4

Recovery: h_1 0.00 h_2 0.01 time 9 sec @ 40'.

Sample Preservatives:

1000 ml, 6, w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow) X
250 ml w/ HNO_3 (red), filtered
250 ml w/ NaOH (green)
500 ml w/ no preservative
40 ml, 2, w/ HCl (blue)

Comments (attach change of instrumentation information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Leachate/Water Monitoring Field Report

Project Name/Number _____ Well Number _____

Sampler(s) _____

Date _____ Time _____

Conditions _____

Field Data:

Depth to Water _____ Total Depth _____

Volume of Water Purged _____

Temperature—#1 _____ #2 _____ #3 _____

Conductivity—#1 _____ #2 _____ #3 _____

pH—#1 _____ #2 _____ #3 _____

Purging: Il _____ Date _____ Time _____

Sample Preservatives:

1000 ml, 0 ml no preservative _____
250 ml w/ H_2SO_4 (yellow) _____
250 ml w/ HNO_3 (red), filtered _____
250 ml w/ NaOH (green) _____
500 ml w/ no preservative _____
40 ml, 2, w/ HCl (blue) _____

Comments (attach change of Instrument/other information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number_____ Well Number SMW-3 3D

Sampler(s)_____

Date 11/4/97 Time 1145

Conditions_____

_____

Field Data: Table (circle) 1 2

Depth to Water 32.26 Total Depth_____

Volume of Water Purged ~2 GAL

POST PURGE

Temperature--#1 ✓ --#2_____ --#3_____ --#4_____

Conductivity--#1 811 --#2_____ --#3_____ --#4_____

pH--#1 10.15 --#2_____ --#3_____ --#4_____

Recovery: h_1 0.00 h_2 0.01 time 14 sec @ 34

Sample Preservatives:

1000 ml, 6, w/ no preservative_____
250 ml w/ H_2SO_4 (yellow)_____
250 ml w/ HNO_3 (red), filtered_____
250 ml w/ NaOH (green)_____
500 ml w/ no preservative_____
40 ml, 2, w/ HCl (blue)_____

Comments (attach change of instrumentation information to this sheet if necessary):

D&A

DAMSCHEN & ASSOCIATES, INC.
CONSULTING ENGINEERS

2030 11TH AVENUE • SUITE 11
P.O. BOX 4817 • HELENA, MT 59604

TELEPHONE (406) 449-8627
FAX (406) 449-8631

July 22, 1997

RECEIVED
JUL 24 1997
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

Ms. Pat Potts
MDEQ Waste Management Division
P.O. Box 200901
Helena, MT 59620-0901

Dear Ms. Potts:

Enclosed please find the results of the Spring, 1997 ground-water monitoring at the landfill operated by Sanitation, Inc. in Lewistown, Montana. The facility was sampled on June 3, 1997.

Ground-water Flow

The static water levels were the highest measured since October, 1995. Depth-to-water measurements are listed on the field data sheets. All static water elevations are posted on the enclosed ground-water flow map.

Assuming that the hydraulic conductivity has not changed significantly in the vicinity of wells SIMW-1 and -2 and piezometer SIP-2, the seepage velocity can be calculated using the data and assumptions initially applied to this facility. The initial calculations used at SIMW-2 were a hydraulic conductivity of 75 feet per day (ft/day). The hydraulic gradient at this point is 0.05 and the porosity is assumed to be 0.35 because of the generally poor sorting of the sediments. The seepage velocity at SIMW-2, then, can be calculated using

$$V_s = KI/n_e$$

as 10.7 feet per day. The hydraulic conductivity at SIMW-3 was measured at 14.6 ft/day and the hydraulic gradient in the vicinity of the well is 0.056. Using the estimated porosity of 0.35, the seepage velocity can be calculated as 2.34 ft/day.

Ground-water Quality

Since sufficient water was available for sampling in monitoring well SIMW-1, piezometer SIP-2 was not sampled. Since SIMW-1 is as close to background as is feasible at this facility, the analytical values for indicator parameters for this well were used as background to compare with the results of samples from SIMW-2 and -3. An ANOVA of all indicator paramters showed sulfate, chloride and nitrate to occur in statistically significant concentrations in both down-gradient wells. These also proved to be anomalous using prediction interval analysis that included the results from SIP-1. The interval analysis should probably be considered as somewhat tentative because only the minimal test population is available, and that is from two different sampling sites.

Monitoring well SIMW-1 contained traces of three volatile organic compounds (VOCs): dichlorodifluoromethane estimated at 0.53 micrograms per liter (µg/l); 1,1,1-trichloroethane estimated

at 0.77 μg/l; and trichlorofluoromethane estimated at 0.47 μg/l. All of the reported values are below the laboratory practical quantitation limit, and none exceeds any established Human Health Standard according to Montana publication WQB-7. Both SIMW-2 and -3 produced samples free of VOCs, so an ANOVA cannot be performed. A prediction interval using all data from SIMW-1 and SIP-2, however, showed 1,1,1-trichloroethane and trichlorofluoromethane to occur in statistically significant quantities over predicted values. Again, however, this statistical evaluation employed the minimum of data available and was performed using data from SIP-2, so the results should be considered carefully before drawing too many conclusions based soley on statistics.

Perhaps what is of greater importance is that the no VOCs were found in monitoring wells SIMW-2 and -3 and those found in SIMW-1 apparantly have not varied significantly over time. The characteristics of the ground-water quality at this facility are following that observed at a number of other facilities, wherein immediately after a large portion of an older waste deposition area is closed and covered, VOC and some indicator parameter concentrations immediately increase, then slowly diminish over time.

The statistically significant occurrances regarding the indicator parameters are not necessarily indicative of the presence of leachate. The three monitoring wells represent a cross-gradient evaluation of the ground water perched beneath the facility and the anomalies were determined using minimal data. Intrawell prediction intervals for the indicator parameters do not indicate that anything unusual is occurring, and an examination of the empirical data do not show any clear trends. The difference in water chemistry between wells is apt to be influenced by spatial variations as readily as by any other factor, particularly at the relatively low concentrations observed to date.

We conclude that the Sanitation, Inc. landfill should continue ground-water monitoring at the current semi-annual frequency for Table 1 constituents. We will continue to use SIMW-1 as the primary sampling point when water levels permit, but will use SIP-2 if necessary.

If you have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,

DAMSCHEN & ASSOCIATES, INC.

Bruce L. Siegmund
Project Hydrogeologist

CC: Al Gallagher, Sanitation, Inc. landfill manager

Kruskal-Wallace Test
Report Printed: 07-17-1997 09:30

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:SO4 dis Sulfate, dissolved

CAS Number:14808-79-8
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	3	33	95.00	0.00	62.33	54.00
SIP-2	1	0	95.00	95.00	95.00	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	4	0	224.00	195.00	208.75	12.84
SIMW-3	4	0	140.00	133.00	136.50	3.51

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	95.0000	3.5
SIMW-1	06/10/96	0.0005	1.0
SIMW-1	06/03/97	92.0000	2.0
SIP-2	11/26/96	95.0000	3.5
			áááááááááááá
	Background Rank Sum:		10.0
	Background Rank Avg:		2.5
SIMW-2	08/16/95	224.0000	12.0
SIMW-2	06/10/96	195.0000	9.0
SIMW-2	10/22/96	214.0000	11.0
SIMW-2	06/03/97	202.0000	10.0
			áááááááááááá
	Compliance Well Rank Sum:		42.0
	Compliance Well Rank Avg:		10.5
SIMW-3	08/16/95	140.0000	8.0
SIMW-3	06/10/96	139.0000	7.0
SIMW-3	10/22/96	133.0000	5.0

SIMW-3 06/03/97 134.0000 6.0
áááááááááááá
Compliance Well Rank Sum: 26.0
Compliance Well Rank Avg: 6.5

H Statistic: 9.8462
H Adjusted for Ties: 9.8807
Degrees of Freedom: 2
Chi-Squared: 5.9915
ZÃ/DF: 1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
*SIMW-2	4.9969	10.50	2.50	8.00
SIMW-3	4.9969	6.50	2.50	4.00

Kruskal-Wallace Test
Report Printed: 07-17-1997 09:30

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:Chld dis Chloride, dissolved

CAS Number:16887-00-6
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	2	0	26.00	25.00	25.50	0.71
SIP-2	1	0	28.00	28.00	28.00	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	4	0	63.00	47.00	56.75	7.41
SIMW-3	4	0	34.00	27.00	31.25	3.40

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	26.0000	2.0
SIMW-1	06/03/97	25.0000	1.0
SIP-2	11/26/96	28.0000	4.0

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Background Rank Sum: 7.0
Background Rank Avg: 2.3

SIMW-2	08/16/95	55.0000	9.0
SIMW-2	06/10/96	47.0000	8.0
SIMW-2	10/22/96	62.0000	10.0
SIMW-2	06/03/97	63.0000	11.0

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Compliance Well Rank Sum: 38.0
Compliance Well Rank Avg: 9.5

SIMW-3	08/16/95	34.0000	6.5
SIMW-3	06/10/96	30.0000	5.0
SIMW-3	10/22/96	34.0000	6.5
SIMW-3	06/03/97	27.0000	3.0

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Compliance Well Rank Sum: 21.0
Compliance Well Rank Avg: 5.3

H Statistic: 8.3258
H Adjusted for Ties: 8.3638
Degrees of Freedom: 2
Chi-Squared: 5.9915
ZÁ/DF: 1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
*SIMW-2	4.9648	9.50	2.33	7.17
SIMW-3	4.9648	5.25	2.33	2.92

Kruskal-Wallace Test
Report Printed: 07-17-1997 09:31

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:NO3/NO2 Nitrate,Nitrite

CAS Number: - -
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.000 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Well ID	Date	Observation	Rank
SIMW-1	06/16/95	26.0000	4.0
SIMW-1	06/23/97	25.0000	1.0
SIMW-2	11/26/96	28.0000	4.0

Background Rank Sum: 7.0
Background Rank Avg: 2.3

SIMW-2	06/16/95	55.0000	6.0
SIMW-2	06/20/95	47.0000	8.0
SIMW-2	10/31/96	82.0000	10.0
SIMW-2	06/03/97	53.0000	11.0

Compliance Well Rank Sum: 35.0
Compliance Well Rank Avg: 9.5

SIMW-3	06/16/95	34.0000	6.5
SIMW-3	06/20/95	30.0000	5.0
SIMW-3	10/22/96	36.0000	6.5
SIMW-3	06/03/97	27.0000	3.0

Compliance Well Rank Sum: 21.0
Compliance Well Rank Avg: 5.3

H Statistic: 8.1259
H Adjusted for Ties: 8.3616
Degrees of Freedom: 1
Chi-Squared: 8.2216
PA/DP: 1.5600

A Indicates a significant evidence of contamination

Well ID	Date	Obs.	Rank	Avg. Background	Avg. Obs.	Difference
SIMW-2	4.9648	2.50	2.33	2.33	7.47
SIMW-3	4.9648	5.25	2.33	3.22

Chemical Analysis Report

Report Issued: 07-17-1997 09:33

Facility:DAN160 Genistarcs, Inc.

Address:P.O. Box 882

City:Jamistown ST:MT Zip:59857

County:FRUGUS

Contact:Bill Goya
Phone: ( )

Permit Type:Detection

Constituent:MTBE/MAD Matrix:Aqueous

Gas Method:
MCL: 0.000 ug/L
ACL: 0.000 ug/L
Report Limit: 0.000 ug/L

Start Date:Aug 16 1995
End Date:Jun 03 1996

Data Made On:Water

Background Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-1	3	0	5.56	4.24	4.76	0.70
SIP-2	1	0	1.79	1.79	1.79	0.00

Compliance Wells

Well ID	N	%ND	Max Value	Min Value	Mean	Std Dev
SIMW-2	4	0	4.18	2.11	3.17	0.97
SIMW-3	4	0	9.25	8.96	9.09	0.12

Well ID	Date	Observation	Rank
SIMW-1	08/16/95	4.4900	7.0
SIMW-1	06/10/96	4.2400	6.0
SIMW-1	06/03/97	5.5600	8.0
SIP-2	11/26/96	1.7900	1.0
		áááááááááááá	
	Background Rank Sum:		22.0
	Background Rank Avg:		5.5
SIMW-2	08/16/95	3.7800	4.0
SIMW-2	06/10/96	4.1800	5.0
SIMW-2	10/22/96	2.6000	3.0
SIMW-2	06/03/97	2.1100	2.0
		áááááááááááá	
	Compliance Well Rank Sum:		14.0
	Compliance Well Rank Avg:		3.5
SIMW-3	08/16/95	8.9600	9.0
SIMW-3	06/10/96	9.2500	12.0
SIMW-3	10/22/96	9.0900	11.0
SIMW-3	06/03/97	9.0800	10.0
		áááááááááááá	
	Compliance Well Rank Sum:		42.0
	Compliance Well Rank Avg:		10.5

H Statistic:	8.0000
H Adjusted for Ties:	8.0000
Degrees of Freedom:	2
Chi-Squared:	5.9915
ZÃ/DF:	1.9600

* Indicates significant evidence of contamination

Well ID	Crit. Diff.	Rank Avg.	Background Rank Avg.	Difference
SIMW-2	4.9969	3.50	5.50	-2.00
*SIMW-3	4.9969	10.50	5.50	5.00

Prediction Intervals
Report Printed: 07-17-1997 09:32

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya

Phone:( ) -

Permit Type:Detection

Constituent:SO4 dis Sulfate, dissolved

CAS Number:14808-79-8
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡¾=Ä¡	08/16/95	95000.0000
¡¾=Ä¡	06/10/96	0.5000
¡¾=Ä¡	11/26/96	95000.0000
¡¾=Ä¡	06/03/97	92000.0000

Summary Statistics

Observations:	4
Mean:	70500.125
Std Dev:	47021.023
Shapiro-Wilk:	0.735

1% Critical Value: 0.687
5% Critical Value: 0.748

Future Data

Well:SIMW-2

Date	Observation
06/03/97	202000.0000

Summary Statistics

Observations: 1
Mean: 70500.125
Std Dev: 47021.023

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
*06/03/97-06/30/97	1	202000.000	[0.0- 194219.891]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Prediction Intervals
Report Printed: 07-17-1997 09:33

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:Chld dis Chloride, dissolved

CAS Number:16887-00-6
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.001 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡¾=Ä¡	08/16/95	26000.0000

¡¾=Ä¡	11/26/96	28000.0000
¡¾=Ä¡	06/03/97	25000.0000

Summary Statistics

Observations:	3
Mean:	26333.334
Std Dev:	1527.525
Shapiro-Wilk:	1.209

1% Critical Value: 0.753
5% Critical Value: 0.767

Future Data

Well:SIMW-2

Date	Observation
06/03/97	63000.0000

Summary Statistics

Observations: 1
Mean: 26333.334
Std Dev: 1527.525

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
*06/03/97-06/30/97	1	63000.000	[0.0- 31483.703]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Prediction Intervals
Report Printed: 07-17-1997 09:35

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:NO3/NO2 Nitrate,Nitrite

CAS Number: - -
MCL: 0.000 mg/l
ACL: 0.000 mg/l
Detect Limit: 0.000 mg/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡¾=Ä¡	08/16/95	4490.0000

¡¾=Ä¡	06/10/96	4240.0000
¡¾=Ä¡	11/26/96	1790.0000
¡¾=Ä¡	06/03/97	5560.0000

Summary Statistics

Observations:	4
Mean:	4020.000
Std Dev:	1593.089
Shapiro-Wilk:	1.024

1% Critical Value:	0.687
5% Critical Value:	0.748

Future Data

Well:SIMW-3

Date	Observation
06/03/97	9080.0000

Summary Statistics

Observations:	1
Mean:	4020.000
Std Dev:	1593.089

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
*06/03/97-06/30/97	1	9080.000	[0.0- 8211.670]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Prediction Intervals
Report Printed: 07-17-1997 09:36

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:1,1,1Tri 1,1,1-Trichloroethane

CAS Number: 71-55-6
MCL: 0.000 ug/l
ACL: 0.000 ug/l
Detect Limit: 1.000 ug/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡¾=Ä¡	08/16/95	0.6700
¡¾=Ä¡	06/10/96	0.3400
¡¾=Ä¡	11/26/96	0.5000
¡¾=Ä¡	06/03/97	0.7700

Summary Statistics

Observations: 4
Mean: 0.570
Std Dev: 0.190
Shapiro-Wilk: 1.091

1% Critical Value: 0.687
5% Critical Value: 0.748

Future Data

Well:SIMW-1

Date	Observation
06/03/97	0.7700

Summary Statistics

Observations: 1
Mean: 0.570
Std Dev: 0.190

Prediction Intervals

Significance Level:0.050000

Date Range	Observations	Mean	Interval
06/03/97-06/30/97	1	0.770 [0.0-	1.069]

* Since the Mean for this period exceeds the upper prediction limit, there is significant evidence of contamination.

Prediction Intervals
Report Printed: 07-17-1997 09:37

Facility:D&A160 Sanitation, Inc.

Address:P.O. Box 882

City:Lewistown ST:MT Zip:59457
County:FERGUS

Contact:Bill Spoya
Phone:( ) -

Permit Type:Detection

Constituent:TClFlMe Trichlorofluoromethane

CAS Number: 75-69-4
MCL: 0.000 ug/l
ACL: 0.000 ug/l
Detect Limit: 1.000 ug/l

Start Date:Aug 16 1995
End Date:Jun 03 1999

Data Mode:Original

Background Data

Well ID	Date	Observation
¡¾=Ä¡	08/16/95	0.4900

¡¾=Ä¡	06/10/96	0.4000
¡¾=Ä¡	11/26/96	0.3200
¡¾=Ä¡	06/03/97	0.4700

Summary Statistics

Observations:	4
Mean:	0.420
Std Dev:	0.077
Shapiro-Wilk:	1.040

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-35970 da
Date : 6/24/97

WATER ANALYSIS REPORT
Sanitation, Inc. Landfill, Lewistown, MT
SI-1

Sample Date : 6/03/97
Sample Time : 0915
Sample Received : 6/06/97

Constituents	Results	Units	Remarks	Ref.	Method	Analysis Date	Analysis Time	By
Sulfate	92	mg/l		EPA	300.0	6/12/97	1957	SKW
Chloride	25	mg/l		EPA	300.0	6/12/97	1957	SKW
Conductivity, @ 25 degrees C	786	µmhos/cm		EPA	120.1	6/06/97	1704	QED
pH @ 25 degrees C	7.3	s.u.		EPA	150.1	6/06/97	1704	QED
Nitrate plus Nitrite as N	5.56	mg/l		EPA	353.2	6/11/97	1520	BAS
Chemical Oxygen Demand	3	mg/l		EPA	410.4	6/10/97	1000	BS
Cyanide, Total	<0.005	mg/l		EPA	335.3	6/09/97	1330	NB
Antimony, Dissolved	<0.05	mg/l		EPA	200.7	6/09/97	1429	RLH
Arsenic,Dissolved	<0.005	mg/l		EPA	200.8	6/10/97	1150	LH
Barium, Dissolved	<0.1	mg/l		EPA	200.7	6/09/97	1429	RLH
Beryllium, Dissolved	<0.001	mg/l		EPA	200.7	6/09/97	1429	RLH
Cadmium,Dissolved	<0.001	mg/l		EPA	200.8	6/10/97	1150	LH
Chromium,Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1429	RLH
Cobalt, Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1429	RLH
Copper,Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1429	RLH
Iron,Dissolved	0.04	mg/l		EPA	200.7	6/09/97	1429	RLH
Lead,Dissolved	<0.01	mg/l		EPA	200.8	6/10/97	1150	LH
Mercury, Dissolved	<0.001	mg/l		EPA	200.8	6/12/97	1449	LH
Nickel, Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1429	RLH
Selenium, Dissolved	0.014	mg/l		EPA	200.8	6/10/97	1150	LH
Silver, Dissolved	<0.005	mg/l		EPA	200.8	6/10/97	1150	LH
Thallium, Dissolved	<0.1	mg/l		EPA	200.7	6/09/97	1429	RLH
Vanadium, Dissolved	<0.1	mg/l		EPA	200.7	6/09/97	1429	RLH
Zinc, Dissolved	0.03	mg/l		EPA	200.7	6/09/97	1429	RLH

ENERGY LABORATORIES, INC.

LABORATORY REPORT

To : Lauchman & Associates, Inc.
Address : Bruce Street
P.O. Box 1812
Helena, MT 59604-6817

Lab No. : 97-3597D 6a
Date : 6/24/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
S1-1

Sample Date : 6/03/97
Sample Time : 09:5
Sample Received : 6/06/97

Constituents	Results	Units	Ref.	Method	Date - Time	By
Solids	52	mg/l		EPA	6/12/97 1852	SC
Chloride	25	mg/l		EPA	6/12/97 1852	SC
Conductivity @ 25 degrees C	760	umhos/cm		EPA	6/06/97 1104	DC
pH @ 25 degrees C	7.3	s.u.		EPA	6/06/97 1104	DC
Nitrate plus Nitrite as N	5.50	mg/l		EPA	6/11/97 1520	SC
Dissolved Oxygen Demand	4	mg/l		EPA	6/06/97 1000	SC
Sulfate, Total	<0.[illegible]	mg/l		EPA	6/06/97 1303	SC
Ammonia, Dissolved	<0.[illegible]	mg/l		EPA	6/06/97 1429	SC
Arsenic, Dissolved	<0.[illegible]	mg/l		EPA	6/10/97 1150	[illegible]
Barium, Dissolved	<0.[illegible]	mg/l		EPA	6/09/97 1427	SC
Beryllium, Dissolved	<0.[illegible]	mg/l		EPA	6/09/97 1429	SC
Cadmium, Dissolved	<0.[illegible]	mg/l		EPA	6/09/97 1429	SC
Chromium, Dissolved	<0.[illegible]	mg/l		EPA	6/09/97 1429	SC
Cobalt, Dissolved	<0.[illegible]	mg/l		EPA	6/09/97 1429	SC
Copper, Dissolved	<0.[illegible]	mg/l		EPA	6/09/97 1429	SC
Iron, Dissolved	0.[illegible]	mg/l		EPA	6/09/97 1429	SC
Lead, Dissolved	<0.01	mg/l		EPA	6/12/97 1150	[illegible]
Mercury, Dissolved	<0.001	mg/l		EPA	6/12/97 1429	[illegible]
Nickel, Dissolved	<0.01	mg/l		EPA	6/09/97 1429	SC
Selenium, Dissolved	0.010	mg/l		EPA	6/10/97 1150	[illegible]
Silver, Dissolved	<0.005	mg/l		EPA	6/10/97 1150	[illegible]
Thallium, Dissolved	<0.1	mg/l		EPA	6/09/97 1429	SC
Vanadium, Dissolved	<0.1	mg/l		EPA	6/09/97 1429	SC
Zinc, Dissolved	0.03	mg/l		EPA	6/09/97 1429	SC

ENERGY LABORATORIES

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FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled: 03-JUN-97 09:15
Date Received: 06-JUN-97
Analysis Date: 13-JUN-97 03:49
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: SI-1

Lab No.: 97-35970
Report Date: 06/16/97 09:55
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	**75-71-8**	**<1.0**	**0.53J**
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	**71-55-6**	**<1.0**	**0.77J**
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	**75-69-4**	**<1.0**	**0.47J**
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.78	98	80--120
Toluene d8	10.0	10.9	109	80--120
p-Bromofluorobenzene	10.0	10.8	108	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb061297.b/17jun12.d

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1730 DELL RANGE BLVD. • CHEYENNE, WY 82001 • (307) 778-2931
FAX (307) 778-2935 • 1-800-735-1693

Client: Dawson and Associates, Inc.
Date Received: 06-JUN-97
Analysis Date: 13-JUN-97 23:45
Project Info: Analytical, Inc. (Anderson, MT
Sample Info: 15-4

Lab No.: 97-33370
Report Date: 06/16/97 09:52
Extraction Method: EPA 3510
Sample Matrix: WATER; pH<2

RECEIVED
JUN 25 1997
DAMSCHEN & ASSOCIATES

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

COMPOUND	CAS NO.	CONCENTRATION UNITS = ug/L (ppb) RESULT	QUALIFIERS
Acetone	67-64-1	<10	U
Acrylonitrile	107-13-1	<10	U
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<10	U
Isobutanol	78-83-1	<10	U
Methyl iodide	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<10	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<10	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	0.772
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	0.472
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
Xylene (total)	1330-20-7	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added (ug/L)	Measured (ug/L)	Recov %	QC Limits
1,2-Dichloroethane d4	10.0	9.79	98	80-120
Toluene d8	10.0	10.3	103	80-120
4-Bromofluorobenzene	10.0	10.8	108	80-120

Surrogate Spike Exceptions and Notes:
U: Surrogate compound was analyzed for but not detected.
J: Estimated value. Present, but less than the limit of quantitation.

ERROR CONDITIONS: None

Analyst: [illegible] Reviewing Supervisor: [illegible] /Norman Lindsay/Brian Wa

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-35971 da
Date : 6/24/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SI-2

Sample Date : 6/03/97
Sample Time : 1015
Sample Received : 6/06/97

Constituents	Results	Units	Remarks	Ref.	Method	Analysis Date	Analysis Time	By
Sulfate	202	mg/l		EPA	300.0	6/12/97	2008	SKW
Chloride	63	mg/l		EPA	300.0	6/12/97	2008	SKW
Conductivity, @ 25 degrees C	1040	µmhos/cm		EPA	120.1	6/06/97	1705	QED
pH @ 25 degrees C	7.3	s.u.		EPA	150.1	6/06/97	1705	QED
Nitrate plus Nitrite as N	2.11	mg/l		EPA	353.2	6/11/97	1520	BAS
Chemical Oxygen Demand	6	mg/l		EPA	410.4	6/10/97	1000	BS
Cyanide, Total	<0.005	mg/l		EPA	335.3	6/09/97	1330	NB
Antimony, Dissolved	<0.05	mg/l		EPA	200.8	6/10/97	1156	LH
Arsenic,Dissolved	<0.005	mg/l		EPA	200.8	6/10/97	1156	LH
Barium, Dissolved	<0.1	mg/l		EPA	200.7	6/09/97	1433	RLH
Beryllium, Dissolved	<0.001	mg/l		EPA	200.8	6/12/97	1512	LH
Cadmium,Dissolved	<0.001	mg/l		EPA	200.8	6/10/97	1156	LH
Chromium,Dissolved	<0.01	mg/l		EPA	200.8	6/10/97	1156	LH
Cobalt, Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1433	RLH
Copper,Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1433	RLH
Iron,Dissolved	0.16	mg/l		EPA	200.7	6/09/97	1433	RLH
Lead,Dissolved	<0.01	mg/l		EPA	200.8	6/10/97	1156	LH
Mercury, Dissolved	<0.001	mg/l		EPA	200.8	6/12/97	1512	LH
Nickel, Dissolved	<0.01	mg/l		EPA	200.8	6/10/97	1156	LH
Selenium, Dissolved	0.014	mg/l		EPA	200.8	6/10/97	1156	LH
Silver, Dissolved	<0.005	mg/l		EPA	200.8	6/10/97	1156	LH
Thallium, Dissolved	<0.10	mg/l		EPA	200.8	6/10/97	1156	LH
Vanadium, Dissolved	<0.1	mg/l		EPA	200.7	6/09/97	1433	RLH
Zinc, Dissolved	0.06	mg/l		EPA	200.7	6/09/97	1433	RLH

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Client: Damschen and Associates, Inc.
Date Sampled: 03-JUN-97 10:15
Date Received: 06-JUN-97
Analysis Date: 13-JUN-1997 07:20
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: SI-2

Lab No.: 97-35971
Report Date: 06/16/97 10:36
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.87	99	80--120
Toluene d8	10.0	11.3	113	80--120
p-Bromofluorobenzene	10.0	10.8	108	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: RAP Reviewing Supervisor: [illegible] /IONTRAP1.i/vb061297.b/22jun12.d

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIERS
Benzene	71-43-2	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl Benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<10	U
Iodomethane	74-88-4	<1.0	U
Methyl Isobutyl Ketone	108-10-1	<10	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl Ketone	78-93-3	<10	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<2.0	U
Vinyl chloride	75-01-4	<1.0	U
m-& Xylene	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Recovered ug/L	Rec %	QC Limits
1,2-Dichloroethane-d4	10.0	8.97	89	72-120
Toluene-d8	10.0	11.3	113	80-120
p-Bromofluorobenzene	10.0	10.8	108	84-120

Analyte concentrations are estimated.
No internal standards were analyzed for but not detected.

REPORT CHEMIST: None

Analyst: _____ Reviewing Supervisor: _____

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled: 03-JUN-97 10:15
Date Received: 06-JUN-97
Analysis Date: 13-JUN-97 13:36
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: SI-2-D

Lab No.: 97-35973
Report Date: 06/16/97 10:46
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.81	98	80--120
Toluene d8	10.0	11.4	114	80--120
p-Bromofluorobenzene	10.0	10.8	108	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: RAP Reviewing Supervisor: [illegible] /IONTRAP1.i/vb061297.b/30jun12.d

ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489

Client: Essexion and Associates, Inc.
Date Received: 01-JUN-97
Date Reviewed: 06-JUN-97
Analysis Date: 13-JUN-97 13:36
Project Name: Sanitization, Inc. Cassville, Cassville: AT
Sample Type: 22-2-3

Lab No.: 97-15573
Report Date: 06/16/97 Page
Extraction Method: EPA 5030
Sample Matrix: WATER; pCm < 3

EPA METHOD 8260A: VOLATILE ORGANIC ANALYSIS REPORT

COMPOUND	CONCENTRATION UNITS = ug/L (ppb) CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
CH2Cl2	75-09-2	<2.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<0.5	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<2.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl Benzene	100-41-4	<2.0	U
2-Hexanone	591-78-6	<20	U
Isobutanol	78-83-1	<2.0	U
Methyl iodide (methyl iodide)	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<2.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p Xylenes	1330-20-7/108-38-3	<2.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate - Compound	Added ug/L	Recovered ug/L	%Rec	QC Limits
1,2-Dichloroethane-d4	10.0	9.41	94	64--132
Toluene-d8	10.0	12.4	124	66--120
p-Bromofluorobenzene	10.0	10.8	108	60--120

Surrogate compounds are spiked into every sample.
Surrogate compounds are analyzed for with the sample.

Analyst: [illegible] Reviewing Supervisor: [illegible]

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FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 97-35972 da
Date : 6/24/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SI-3

Sample Date : 6/03/97
Sample Time : 1115
Sample Received : 6/06/97

Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Sulfate	134	mg/l		EPA	300.0	6/12/97	2041	SKW
Chloride	27	mg/l		EPA	300.0	6/12/97	2041	SKW
Conductivity, @ 25 degrees C	683	µmhos/cm		EPA	120.1	6/06/97	1706	QED
pH @ 25 degrees C	7.4	s.u.		EPA	150.1	6/06/97	1706	QED
Nitrate plus Nitrite as N	9.08	mg/l		EPA	353.2	6/11/97	1520	BAS
Chemical Oxygen Demand	5	mg/l		EPA	410.4	6/10/97	1000	BS
Cyanide, Total	<0.005	mg/l		EPA	335.3	6/09/97	1330	NB
Antimony, Dissolved	<0.05	mg/l		EPA	200.7	6/09/97	1435	RLH
Arsenic,Dissolved	<0.005	mg/l		EPA	200.8	6/10/97	1218	LH
Barium, Dissolved	<0.1	mg/l		EPA	200.7	6/09/97	1435	RLH
Beryllium, Dissolved	<0.001	mg/l		EPA	200.7	6/09/97	1435	RLH
Cadmium,Dissolved	<0.001	mg/l		EPA	200.8	6/10/97	1218	LH
Chromium,Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1435	RLH
Cobalt, Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1435	RLH
Copper,Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1435	RLH
Iron,Dissolved	<0.03	mg/l		EPA	200.7	6/09/97	1435	RLH
Lead,Dissolved	<0.01	mg/l		EPA	200.8	6/10/97	1218	LH
Mercury, Dissolved	<0.001	mg/l		EPA	200.8	6/12/97	1517	LH
Nickel, Dissolved	<0.01	mg/l		EPA	200.7	6/09/97	1435	RLH
Selenium, Dissolved	0.024	mg/l		EPA	200.8	6/10/97	1218	LH
Silver, Dissolved	<0.005	mg/l		EPA	200.8	6/10/97	1218	LH
Thallium, Dissolved	<0.1	mg/l		EPA	200.7	6/09/97	1435	RLH
Vanadium, Dissolved	<0.1	mg/l		EPA	200.7	6/09/97	1435	RLH
Zinc, Dissolved	0.03	mg/l		EPA	200.7	6/09/97	1435	RLH

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LABORATORY REPORT

Page: 1

To: Sanderson & Associates, Inc.
Address: Force Stockyard
P.O. Box 1812
Helena, MT 59604-1812

Lab No. : 97-35972 da
Date : 6/27/97

WATER ANALYSIS REPORT

Sanitation, Inc. Landfill, Lewistown, MT
SL-1

Sample Date 6/03/97
Sample Time 1115
Sample Received : 6/06/97

Constituents	Results	Units	Method Ref	Method	Date	Time	By
Sulfate	136	mg/l	EPA	300.0	6/12/97	2041	SGW
Chloride	27	mg/l	EPA	300.0	6/12/97	2041	SGW
Conductivity @ 25 degrees C	825	µmhos/cm	EPA	120.1	6/06/97	1706	CEB
pH @ 25 degrees C	7.4	S.U.	EPA	150.1	6/06/97	1706	CEB
Nitrate plus Nitrite as N	<0.05	mg/l	EPA	353.2	6/11/97	1520	BAC
Dissolved Oxygen Second	2	mg/l	EPA	415.3	6/11/97	1000	BE
Cyanide, Total	<0.005	mg/l	EPA	335.3	6/09/97	1330	MJH
Ammonia, Dissolved	<0.05	mg/l	EPA	350.1	6/09/97	1435	RLH
Arsenic, Dissolved	<0.005	mg/l	EPA	206.2	6/10/97	1528	LH
Barium, Dissolved	<0.1	mg/l	EPA	200.7	6/09/97	1435	RLH
Beryllium, Dissolved	<0.001	mg/l	EPA	200.7	6/09/97	1435	RLH
Cadmium, Dissolved	<0.001	mg/l	EPA	200.8	6/10/97	1232	CH
Calcium, Dissolved	<0.01	mg/l	EPA	200.7	6/09/97	1435	RLH
Chromium, Dissolved	<0.01	mg/l	EPA	200.7	6/09/97	1435	RLH
Copper, Dissolved	<0.01	mg/l	EPA	200.7	6/09/97	1435	RLH
Iron, Dissolved	<0.03	mg/l	EPA	200.7	6/09/97	1435	RLH
Lead, Dissolved	<0.01	mg/l	EPA	200.9	6/10/97	1315	RLH
Mercury, Dissolved	<0.001	mg/l	EPA	245.2	6/12/97	1517	CH
Nickel, Dissolved	<0.01	mg/l	EPA	200.7	6/09/97	1435	RLH
Selenium, Dissolved	0.004	mg/l	EPA	200.9	6/10/97	1212	LH
Silver, Dissolved	<0.005	mg/l	EPA	200.9	6/10/97	1212	LH
Thallium, Dissolved	<0.1	mg/l	EPA	200.7	6/09/97	1435	RLH
Vanadium, Dissolved	<0.1	mg/l	EPA	200.7	6/09/97	1435	RLH
Zinc, Dissolved	0.03	mg/l	EPA	200.7	6/09/97	1435	RLH

ENERGY LABORATORIES

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Client: Damschen and Associates, Inc.
Date Sampled: 03-JUN-97 11:15
Date Received: 06-JUN-97
Analysis Date: 13-JUN-97 08:02
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: SI-3

Lab No.: 97-35972
Report Date: 06/16/97 10:42
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.0	100	80--120
Toluene d8	10.0	11.2	112	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: RAP Reviewing Supervisor: DMB /IONTRAP1.i/vb061297.b/23jun12.d

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 MONROE NW • ALBUQUERQUE, NM 87197-0916 • PHONE (505) 345-3975
FAX (505) 345-4107 • 1-800-765-4067

Client: Dawsons and Associates, Inc.
Date Received: 06-JUN-97 12:15
Date Reported: 06-JUN-97
Analysis Date: 12-JUN-97 09:02
Project: Juno: Montezuma, Inc: Zanesville, Lawrence, KS
Sample Type: Water

Lab No.: 97-3597
Report Date: 06/14/97 10:42
Extraction Method: EPA 5030
Sample Matrix: WATER; pH< 2

EPA METHOD 8260A: VOLATILE ORGANIC ANALYSIS REPORT

Compound	CAS NO.	Concentration Units - ug/L (ppb) RESULT	QUALIFIER
Acetone	67-64-1	<10	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromobromomethane	75-27-4	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-1-butene	110-57-6	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methyl iodide	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,2,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,1,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,2,4-Trichlorobenzene	120-82-1	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<5.0	U
Vinyl chloride	75-01-4	<1.0	U
m,p-Xylene	1068281/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-Conc.	Measured-Conc.	Recov.	QC Limits
1,2-Dichloroethane-d4	10.0	10.1	100	80--120
Toluene-d8	10.0	11.2	112	80--120
4-Bromofluorobenzene	10.0	10.3	103	80--120

Qualifiers: See explanation and notes.
U: Analyte analyzed but not detected.

REPORT CONSULTANT: Kim

Analyst: _____ Reviewing Supervisor: _____ (Chemical Laboratory Director)

ENERGY LABORATORIES

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Client: Damschen and Associates, Inc.
Date Sampled:
Date Received: 06-JUN-97
Analysis Date: 16-JUN-1997 18:25
Project Info: Sanitation, Inc. Landfill, Lewistown, MT
Sample Info: Trip Blank

Lab No.: 97-35974
Report Date: 06/19/97 15:33
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.0	100	80--120
Toluene d8	10.0	11.3	113	80--120
p-Bromofluorobenzene	10.0	9.87	99	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: LAP Reviewing Supervisor: [illegible]

/IONTRAP1.i/vb061697.b/10jun16.d

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 MOUNTAIN VIEW • BILLINGS, MT 59107-0916 • 1-406-252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Dowsers and Associates, Inc.
Date Received:
Date Reported: 06-JUN-97
Analysis Date: 16-JUN-1997 14:35
Project Info: Sacramento, Inc. Lacrosse, LT
Sample Plan: Tele Plant

Lab No.: 97-13874
Report Date: 06/16/97 14:11
Extraction Method: EPA 5030
Sample matrix: WATER; Qty = 2

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CAS NO.	RESULT	QUALIFIER
74-87-3	<50	U
107-13-1	<20	U
71-43-2	<1.0	U
74-97-5	<1.0	U
75-27-4	<1.0	U
75-25-2	<1.0	U
74-83-9	<1.0	U
75-15-0	<1.0	U
56-23-5	<1.0	U
108-90-7	<1.0	U
75-00-3	<1.0	U
67-66-3	<1.0	U
74-87-3	<1.0	U
124-48-1	<1.0	U
96-12-8	<1.0	U
106-93-4	<1.0	U
74-95-3	<1.0	U
95-50-1	<1.0	U
106-46-7	<1.0	U
110-57-6	<1.0	U
75-71-8	<1.0	U
75-34-3	<1.0	U
107-06-2	<1.0	U
75-35-4	<1.0	U
156-59-2	<1.0	U
156-60-5	<1.0	U
78-87-5	<1.0	U
10061-01-5	<1.0	U
10061-02-6	<1.0	U
75-69-4	<1.0	U
123-91-1	<1.0	U
106-42-3	<1.0	U
108-38-3	<1.0	U
71-55-6	<1.0	U
79-00-5	<1.0	U
79-01-6	<1.0	U
75-69-4	<1.0	U
108-05-4	<1.0	U
75-01-4	<1.0	U
1330207/1068422	<1.0	U
95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surr. Date Compound	Added ug/L	Measured ug/L	%Rec	Qc Limits
1,2-Dichloroethane-d4	15.0	16.0	106	81--118
Toluene-d8	15.0	15.3	102	80--120
4-Bromofluorobenzene	15.0	15.87	106	85--115

Qualifier Code Explanations and notes:
No Surrogates were analyzed for this Sample.

REPORT COMMENTS: None

Analyst: [illegible] Reviewing Signature: [illegible] FORMAT: FORMAT 8260A

Quality Control Sample: Laboratory Reagent Blank 12-JUN-97 19:29
Report Date: 06/16/97 09:47
Extraction Method: EPA 5030
Sample Matrix: WATER
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.63	96	80--120
Toluene d8	10.0	11.2	112	80--120
p-Bromofluorobenzene	10.0	10.8	108	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: RAP Reviewing Supervisor: WB /IONTRAP1.i/vb061297.b/05jun12.d

Quality Control Sample: Laboratory Reagent Blank 11-JUN-97 13:25
Report Date: 06/16/97 09:47
Extraction Method: EPA 5030
Sample Matrix: WATER

Description: This laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUND	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<20	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<5.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl Benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<5.0	U
Iodomethane	74-88-4	<1.0	U
Methyl Isobutyl Ketone	108-10-1	<5.0	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl Ketone	78-93-3	<5.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,2,3-Trichlorobenzene	87-61-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m,p-Xylene	108/106-42	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
4-Bromofluorobenzene	20.0	4.83	24	32--139
Toluene-d8	10.0	11.3	113	80--120
1,2-Dichloroethane-d4	10.0	10.8	108	80--120

Surrogate was diluted out.
No Surrogate compound was analyzed for and not detected.

REPORT COMMENTS: None

Analyst: Kyle Supervisor: Supervisor Date: Director/Chemist

Quality Control Sample: Laboratory Reagent Blank 13-JUN-97 06:37
Report Date: 06/16/97 10:35
Extraction Method: EPA 5030
Sample Matrix: WATER
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.61	96	80--120
Toluene d8	10.0	11.5	115	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: KAP Reviewing Supervisor: [illegible]

/IONTRAP1.i/vb061297.b/21jun12.d

Quality Control Special Laboratory Raleigh Blank 12-JUN-97 06:37
Report Date: 06/24/97 10:32
Experiment Method: EPA 8010
Sample Matrix: WATER

Reagent Blank Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUND	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform/Tribromomethane	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,2,4-Trichlorobenzene	120-82-1	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m-Xylene	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane-d4	10.0	9.61	96	80-120
Toluene-d8	10.0	12.8	128	80-120
4-Bromofluorobenzene	10.0	10.4	104	80-120

Surrogate %rec exceeds QC limits

Surrogate compound was analyzed too low or not detected

REPORT COMMENTS: None

Analyst: Raleigh Supervisor:

Quality Control Sample: Laboratory Reagent Blank 16-JUN-97 17:42
Report Date: 06/19/97 15:56
Extraction Method: EPA 5030
Sample Matrix: WATER
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.95	99	80--120
Toluene d8	10.0	11.4	114	80--120
p-Bromofluorobenzene	10.0	10.5	105	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: KAP Reviewing Supervisor: [illegible]

/IONTRAP1.i/vb061697.b/09jun16.d

Quality Control Sample: Laboratory Reagent Blank LR-QCW-37 17:42
Report Date: 06/12/87 18:36
Extraction Method: EPA 3520
Sample Matrix: WATER
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analyte or other interferences are present in the laboratory environment; the reagents, or the apparatus.

EPA METHOD 8260A: VOLATILE ORGANICS ANALYSIS REPORT

Compound	CAS NO.	Concentration Units = ug/L (ppb) Result	Detection Limit
Acetone	67-64-1	<50	5
Acrylonitrile	107-13-1	<20	5
Benzene	71-43-2	<1.0	5
Bromodichloromethane	75-27-5	<1.0	5
Bromoform/Tribromomethane	75-25-2	<1.0	5
Bromomethane	74-83-9	<1.0	5
Carbon disulfide	75-15-0	<1.0	5
Carbon tetrachloride	56-23-5	<1.0	5
Chlorobenzene	108-90-7	<1.0	5
Chloroethane	75-00-3	<1.0	5
Chloroform	67-66-3	<1.0	5
Chloromethane	74-87-3	<1.0	5
Dibromochloromethane	124-48-1	<1.0	5
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	5
1,2-Dibromoethane	106-93-4	<1.0	5
Dibromomethane	74-95-3	<1.0	5
1,2-Dichlorobenzene	95-50-1	<1.0	5
1,4-Dichlorobenzene	106-46-7	<1.0	5
trans-1,4-Dichloro-2-butene	110-57-6	<1.0	5
Dichlorodifluoromethane	75-71-8	<1.0	5
1,1-Dichloroethane	75-34-3	<1.0	5
1,2-Dichloroethane	107-06-2	<1.0	5
1,1-Dichloroethene	75-35-4	<1.0	5
cis-1,2-Dichloroethene	156-59-2	<1.0	5
trans-1,2-Dichloroethene	156-60-5	<1.0	5
1,2-Dichloropropane	78-87-5	<1.0	5
cis-1,3-Dichloropropene	10061-01-5	<1.0	5
trans-1,3-Dichloropropene	10061-02-6	<1.0	5
Ethyl benzene	100-41-4	<1.0	5
2-Hexanone	591-78-6	<20	5
Iodomethane	74-88-4	<1.0	5
Methyl isobutyl ketone	108-10-1	<20	5
Methylene chloride	75-09-2	<1.0	5
Methyl ethyl ketone	78-93-3	<20	5
Styrene	100-42-5	<1.0	5
1,1,2,2-Tetrachloroethane	630-20-6	<1.0	5
1,1,2,2-Tetrachloroethene	79-34-5	<1.0	5
Tetrachloroethene	127-18-4	<1.0	5
Toluene	108-88-3	<1.0	5
1,1,1-Trichloroethane	71-55-6	<1.0	5
1,1,2-Trichloroethane	79-00-5	<1.0	5
Trichloroethene	79-01-6	<1.0	5
Trichlorofluoromethane	75-69-4	<1.0	5
1,2,3-Trichloropropane	96-18-4	<1.0	5
Vinyl acetate	108-05-4	<1.0	5
Vinyl chloride	75-01-4	<1.0	5
m-Xylene	108383/106423	<1.0	5
o-Xylene	95-47-6	<1.0	5

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Mean rec ug/L	Std. Dev.	% Recovery	QC Limits
1,2-Dichloroethane-d4	10.0	9.8	0.4	98	76-114
Toluene-d8	10.0	11.4	0.7	114	90-120
p-Bromofluorobenzene	10.0	10.2	0.5	102	86-120

Remarks: Some surrogates out of range.
No surrogate recovery was analyzed for or not detected.

Report Comments: None

Analyst: [illegible] Reviewing Supervisor: [illegible] Chemical Analysis Supervisor: [illegible]

EPA METHOD 8260A: QUALITY ASSURANCE BLANK MATRIX SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 12-JUN-1997 18:48
Report Date: 06/19/97 21:46
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /IONTRAP1.i/vb061297.b/04jun12.d
Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	4.84	97	60--140
Chlorobenzene	5.00	4.96	99	60--140
1,3-Dichlorobenzene	5.00	4.74	95	60--140
1,4-Dichlorobenzene	5.00	4.69	94	60--140
1,2-Dichloroethane	5.00	4.60	92	60--140
1,1-Dichloroethene	5.00	5.02	100	60--140
trans-1,2-Dichloroethene	5.00	4.92	98	60--140
1,2-Dichloropropane	5.00	5.05	101	60--140
Ethyl benzene	5.00	5.24	105	60--140
Tetrachloroethene	5.00	5.29	106	60--140
1,1,2-Trichloroethane	5.00	5.37	107	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.56	96	80--120
Toluene d8	10.0	11.6	116	80--120
p-Bromofluorobenzene	10.0	10.0	100	80--120

REPORT COMMENTS: None

Analyst: LAP Reviewing Supervisor: AMD

EPA METHOD 8260A: QUALITY ASSURANCE BLANK MATRIX SPIKE REPORT

Quality Control sample: Certified Reference Sample Analysis 12-JUN-1997 18:45
Report Date: 30/12/97 21:45
Extraction Method: EPA 5030
Sample Matrix: Water
File: /FORTEXT1 1/vbsa1297.b/ms1ma12 d

Remarks: This certified reference sample was added into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce acceptable results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	4.84	97	50--140
Chlorobenzene	5.00	4.66	93	50--140
1,2-Dichloroethane	5.00	4.74	95	50--140
1,4-Dichlorobenzene	5.00	4.65	93	50--140
1,1-Dichloroethene	5.00	4.79	96	50--140
1,2-Dichloroethane	5.00	5.01	100	50--140
trans-1,2-Dichloroethene	5.00	4.92	98	50--140
1,2-Dichloropropane	5.00	5.05	101	50--140
Ethyl benzene	5.00	5.24	105	50--140
Tetrachloroethene	5.00	5.29	106	50--140
1,1,2-Trichloroethane	5.00	5.37	107	50--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	25.0	23.8	95	80--120
Toluene d8	25.0	25.4	102	80--120
p-Bromofluorobenzene	25.0	25.4	102	80--120

REVIEW COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

EPA METHOD 8260A: QUALITY ASSURANCE MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 20-JUN-97 03:31
Lab No.: 97-35971
Report Date: 06/20/97 10:08
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /IONTRAP1.i/vb062097.b/08jun20.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Benzene	5.00	<1.00	4.55	91	60--140
Chlorobenzene	5.00	<1.00	5.11	102	60--140
1,1-Dichloroethene	5.00	<1.00	4.83	97	60--140
Toluene	5.00	<1.00	5.14	103	60--140
Trichloroethene	5.00	<1.00	5.41	108	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	20.0	20.0	100	80--120
Toluene d8	20.0	22.8	114	80--120
p-Bromofluorobenzene	20.0	21.4	107	80--120

EPA METHOD 8260A: QUALITY ASSURANCE MATRIX SPIKE DUPLICATE REPORT

Quality Control Sample: Matrix Spike Duplicate Analysis 20-JUN-97 04:12
Lab No.: 97-35971
File: /IONTRAP1.i/vb062097.b/09jun20.d
Remarks: These compounds were again spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD %Rec	%RPD	---QC Limits-- RPD	Rec
Benzene	5.00	4.74	95	4	11	60--140
Chlorobenzene	5.00	5.13	103	1	13	60--140
1,1-Dichloroethene	5.00	4.96	99	3	14	60--140
Toluene	5.00	5.22	104	2	13	60--140
Trichloroethene	5.00	5.56	111	3	14	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	20.0	19.6	98	80--120
Toluene d8	20.0	22.2	111	80--120
p-Bromofluorobenzene	20.0	20.6	103	80--120

REPORT COMMENTS: None

Analyst: LAF Reviewing Supervisor: MTB

EPA METHOD 8260A: QUALITY ASSURANCE MATRIX SPIKE REPORT
Quality Control Sample: Matrix Spike Analysis 20-JUN-97 09:13
Lab No.: 97-1507
Report Date: 20/06/97 10:08
Analysis Matrix: WATER
Method: EPA 8260
File: /u0/chem/ms/ms0620g7.b/ms0ms26.d
Comments: These percentages were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Sample Conc.	Matrix Spike Conc.	MS % Recovery	QC Limits %
Benzene	5.00	<1.00	4.65	93	60-140
Chlorobenzene	5.00	<1.00	5.12	102	60-140
1,1-Dichloroethene	5.00	<1.00	4.85	97	60-140
Toluene	5.00	<1.00	5.14	103	60-140
Trichloroethene	5.00	<1.00	5.67	134	60-140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	% rec	QC Limits
1,2-Dichloroethane d4	20.0	20.0	100	80-120
Toluene d8	20.0	22.8	114	80-120
p-Bromofluorobenzene	20.0	21.4	107	80-120

EPA METHOD 8260A: QUALITY ASSURANCE MATRIX SPIKE DUPLICATE REPORT
Quality Control Sample: Matrix Spike Duplicate Analysis 20-JUN-97 09:13
Lab No.: 97-1507
File: /u0/chem/ms/ms0620g7.b/ms0ms27.d
Comments: These percentages were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD Mean	RPD Calc	RPD Mean	QC Limits % Mean
Benzene	5.00	4.76	95	4	11	60-140
Chlorobenzene	5.00	5.23	103	1	13	60-140
1,1-Dichloroethene	5.00	4.95	99	2	14	60-140
Toluene	5.00	5.23	104	3	15	60-140
Trichloroethene	5.00	5.66	113	2	14	60-140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	% rec	QC Limits
1,2-Dichloroethane d4	20.0	22.0	110	80-120
Toluene d8	20.0	22.3	111	80-120
p-Bromofluorobenzene	20.0	20.6	103	80-120

REPORT COMMENTS: None

Analyst: [illegible] Reviewing Supervisor: [illegible]

Lab No(s). 97-35970 - 97-35972

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Constituents	Duplicate Analysis --- mg/l (ppm) --- Original	Duplicate	Spiked Analysis % Recovery	Blank Analysis, mg/l ppm	------ Reference ------ Sample Analysis, mg/l ppm	Accept Range mg/l ppm	Date Analyzed
Sulfate	134	133	105	<1	319	286-350	12-JUN-97
Chloride	27	27	107	<1	77	69-85	12-JUN-97
Specific Conductance @ 25 umhos/cm	2290	2290	N/A	1	N/A	N/A	06-JUN-97
pH s.u.	8.6	8.6	N/A	N/A	N/A	N/A	06-JUN-97
Nitrate plus Nitrite as N	<0.05	<0.05	100	<0.05	1.14	1.02-1.28	11-JUN-97
Total Cyanide	0.018	0.019	102	<0.005	0.232	0.139-0.271	09-JUN-97
Chemical Oxygen Demand	8	8	100	<1	40	23-43	10-JUN-97
Dissolved Metals							
Antimony	<0.05	<0.05	96	<0.05	0.96	0.90 - 1.10	09-JUN-97
Arsenic	<0.005	<0.005	105	<0.005	0.049	0.045 - 0.055	10-JUN-97
Barium	<0.1	<0.1	102	<0.1	1.0	0.9 - 1.1	09-JUN-97
Beryllium	<0.001	<0.001	95	<0.001	0.201	0.180 - 0.220	09-JUN-97
Cadmium	<0.001	<0.001	106	<0.001	0.050	0.045 - 0.055	10-JUN-97
Chromium	<0.01	<0.01	98	<0.01	1.00	0.90 - 1.10	09-JUN-97
Cobalt	<0.01	<0.01	96	<0.01	0.99	0.90 - 1.10	09-JUN-97
Copper	<0.01	<0.01	99	<0.01	0.99	0.90 - 1.10	09-JUN-97
Iron	0.43	0.44	98	<0.03	4.97	4.50 - 5.50	09-JUN-97
Lead	<0.01	<0.01	105	<0.01	0.05	0.04 - 0.06	10-JUN-97
Mercury	<0.001	<0.001	88	<0.001	0.005	0.004 - 0.006	12-JUN-97
Nickel	<0.01	<0.01	95	<0.01	0.99	0.90 - 1.10	09-JUN-97
Selenium	<0.005	<0.005	105	<0.005	0.048	0.045 - 0.055	10-JUN-97
Silver	<0.005	<0.005	80	<0.005	0.018	0.018 - 0.022	10-JUN-97
Thallium	<0.1	<0.1	98	<0.1	1.0	0.9 - 1.1	09-JUN-97
Vanadium	0.1	<0.1	99	<0.1	1.0	0.9 - 1.1	09-JUN-97
Zinc	<0.01	<0.01	99	<0.01	0.99	0.90 - 1.10	09-JUN-97

Lab No(s). 97-13970 - 97-14972

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Parameters	Equipment analysis --- mg/l (ppm) --- Original Duplicate	% Recovery	Spiked Analysis mg/l spk	Blank Analysis mg/l blk	Sample Analysis mg/l smp	Reference ------ Accepc Range mg/l rpm	Date Analyzed
Alkalis	164	121	101	<1	118	344-120	11-JUN-97
Chloride	47	27	107	<1	77	61-85	11-JUN-97
Nonvolatile Convertible Residue @ 25	1240	1240	N/A	0	N/A	N/A	02-JUN-97
Nitrate plus Nitrite as N	4.4	4.4	N/A	N/A	N/A	N/A	02-JUN-97
Total Cyanide	20.0	20.0	101	<0.05	1.16	1.82-3.24	11-JUN-97
Total Carbon Dioxide	6.018	6.018	102	<0.005	0.172	0.117-0.171	09/06/97
	8	8	100	<1	40	32-48	12-JUN-97

Analytical Matrix

[illegible]	10.0	10.0	99	<0.05	0.88	0.50 - 1.10	04-JUN-97
[illegible]	250.0	250.0	101	250.0	0.018	0.040 - 0.060	10-JUN-97
[illegible]	1.0	1.0	102	1.0	0	0 - 1.2	05-JUN-97
[illegible]	100.0	100.0	99	<0.001	0.101	0.18 - 1.30	04-JUN-97
[illegible]	400.0	400.0	104	<0.01	0.018	0.018 - 0.022	10-JUN-97
[illegible]	10.0	10.0	99	<0.05	3.00	0.20 - 1.40	04-JUN-97
[illegible]	10.0	10.0	99	<0.05	0.84	0.50 - 1.10	04-JUN-97
[illegible]	10.0	10.0	99	<0.05	0.98	0.50 - 1.10	04-JUN-97
[illegible]	24.0	24.0	98	<0.5	4.97	4.20 - 5.70	09-JUN-97
[illegible]	10.0	10.0	102	<0.05	0.02	0.04 - 0.06	10-JUN-97
[illegible]	200.0	200.0	98	0.0	0.004	0.004 - 0.006	11-JUN-97
[illegible]	10.0	10.0	98	<0.01	0.99	0.90 - 1.10	10-JUN-97
[illegible]	200.0	200.0	101	0.0	0.040	0.040 - 0.060	12-JUN-97
[illegible]	300.0	300.0	99	0.0	0.010	0.014 - 0.022	16-JUN-97
[illegible]	1.0	1.0	98	<0.1	1.0	0.8 - 1.2	09-JUN-97
[illegible]	1.0	1.0	99	<0.0	1.0	0.8 - 1.2	09-JUN-97
[illegible]	10.0	10.0	99	<0.05	0.98	0.36 - 1.14	09-JUN-97

Lab Nos.: 97-35970 - 97-35974

Date: 06-JUN-97

Received by: Lesley Martin

Logged In by: Pam Fink

SAMPLE CONDITION QA/QC REPORT

This report provides information about the condition of the sample(s) and associated sample custody information on receipt at the laboratory.

Chain of Custody Form Completed & Signed	Yes	Comments:
Chain of Custody Seal	No	Comments:
Intact	N/A	Comments:
Signature Match Chain of Custody vs. Seal	N/A	Comments:
Samples Received Cold	Yes	Comments:
Samples Received Within Holding Time	Yes	Comments:
Samples Received in Proper Containers	Yes	Comments:
Samples Received Properly Preserved	Yes	Comments:

Samples requiring analysis for volatile organics are tested for proper preservation at the time of analysis. Any preservation problems encountered for these samples are noted on the analytical parameter report pages.

Client notified about sample discrepancies:

Who:_____ By:_____ Date/Time:_____

Method of Shipping: Hand Del.

Additional comments:_____

Lab Nos: 27-25270 - 27-25274

Date: 05-JUN-97

Received by: Larry Martin

Logged in by: Ron Fink

SAMPLE CONDITION QA/QC REPORT

This report provides information about the condition of the sample(s) and associated sample custody information on receipt at the laboratory.

Chain of Custody Form Completed & Signed	Yes	Comments:
Chain of Custody Seal	No	Comments:
Intact	N/A	Comments:
Signature Match Chain of Custody vs. Seal	N/A	Comments:
Samples Received Cold	Yes	Comments:
Samples Received Within Holding Time	Yes	Comments:
Samples Received in Proper Containers	Yes	Comments:
Samples Received Properly Preserved	Yes	Comments:

Samples requiring analysis for volatile organics are tested for proper preservation at the time of analysis. Any preservation problems encountered for these samples are noted on the analytical documentation report page.

Client verbal about sample discrepancies:

When: _____ By: _____ Date/Time: _____

Method of Shipping Bond Ok: _____

Additional comments: _____

ENERGY LABORATORIES, INC
P.O. Box 30916 1120 South 27th Street
Billings, Montana 59107
toll-free 800-735-4489
voice 406-252-6325
fax 406-252-6069

CHAIN OF CUSTODY RECORD

PLEASE PRINT OR TYPE ALL INFORMATION EXCEPT SIGNATURES

P.O. #

Project Name / Address: SANITATION, INC. LANDFILL HELMSTOWN MT

Contact Name & Phone: BRUCE SIEGMUND 449-9127

Sampler's signature: [signature]

Invoice to: DAMSCHEN + ASSOC POB 4817 HELENA 59604

Report to: D + A

DATE	TIME	composite	grab sample	SAMPLE I.D.	number of containers	Sample Type: A W S V U O Air Water Soils/solids Vegetation Urine Other	MT SOLID WASTE TARGET	MT SOLID WASTE TARGET VOC ONLY							Comments, Special Instructions, etc.
6/3/97	915			SI-1	6w		X								
"	1015			SI-2	6w		X								
"	1115			SI-3	6w		X								
"	1015			SI-2-D	2w			X							
				TRIP BLANK (SI)	1w			X							

	Relinquished (signature)	Date	Time	Received by: (signature)		Relinquished (signature)	Date	Time	Received by (signature):
1.	[signature]	6/6/97	1130		3.				
2.					4.		6/6/97	11:25	Received for laboratory by (signature): [signature]

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number SANITATION INC Well Number SIMW-1 (S1-1 ON BOTTLES)

Sampler(s) BS

Date 6/3/97 Time 9:15

Conditions CLEAR WINDY 60°F

Field Data: Table (circle) 1 2

Depth to Water 44.32 Total Depth 47.46

Volume of Water Purged ~1 GAL (PURGED DRY)

Temperature--#1____--#2____--#3____--#4____

Conductivity--#1 1137 --#2____--#3____--#4____

pH--#1 8.26 --#2____--#3____--#4____

Recovery: h_1____ h_2____ time____

Sample Preservatives:

- 1000 ml, 6, w/ no preservative N/A
- 250 ml w/ H_2SO_4 (yellow) X
- 250 ml w/ HNO_3 (red), filtered
- 250 ml w/ NaOH (green)
- 500 ml w/ no preservative
- 40 ml, 2, w/ HCl (blue)

Comments (attach change of instrumentation information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number [illegible] Well Number SMW-1

Sampler(s) [illegible]

Date [illegible] Time 9:15

Conditions [illegible]

Field Data:

Depth to Water [illegible] Total Depth [illegible]

Volume of Water Purged [illegible]

Temperature--#1 _____ --#2 _____ --#3 _____ --#4 _____

Conductivity--#1 [illegible] --#2 _____ --#3 _____ --#4 _____

pH--#1 [illegible] --#2 _____ --#3 _____ --#4 _____

Recovery: 1) _____ 2) _____ time _____

Sample Preservatives:

1000 ml, 0, w/ no preservative [illegible]
250 ml w/ H_2SO_4 (yellow) [illegible]
250 ml w/ HNO$_3$ (red), filtered [illegible]
250 ml w/ NaOH (green) [illegible]
500 ml w/ no preservative [illegible]
40 ml, 2, w/ HCl (blue) [illegible]

Comments (attach, change or instrumentation information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number SANITATION, INC Well Number SIMW-2 (SI-2 on BOTTLES)

Sampler(s) BS

Date 6/3/97 Time 10:15

Conditions WINDY CLEAR 60° F

Field Data: Table (circle) 1 2

Depth to Water 34.84 Total Depth 42.35

Volume of Water Purged ~1.5 - 2 (PURGED DRY)

Temperature--#1_____--#2_____--#3_____--#4_____

POST PURGE

Conductivity--#1 1885 --#2_____--#3_____--#4_____

pH--#1 7.57 --#2_____--#3_____--#4_____

Recovery: h_1 0.0 h_2 0.01 time 8 sec. @ 35.45

Sample Preservatives:

- 1000 ml, 6, w/ no preservative N/A
- 250 ml w/ H_2SO_4 (yellow)_____
- 250 ml w/ HNO_3 (red), filtered_____
- 250 ml w/ NaOH (green)_____
- 500 ml w/ no preservative_____
- 40 ml, 2, w/ HCl (blue)_____

Comments (attach change of instrumentation information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Gas-Water Monitoring Field Report

Project Name/Number SPAN TRANS - 2 Well Number SMW - 2 (S1 - 2 — Sen)

Sampler(s) [illegible]

Date [illegible] Time 10:15

Conditions [illegible] CLOUDY 60° F

Field Data Table (circle) 1 2

Depth to Water 20.8' Total Depth 42.55'

Volume of Water Purged ~ 1.5 - 2 (Passed Dry)

Temperature-#1 _____ -#2 _____ -#3 _____ -#4 _____

Conductivity-#1 [illegible] -#2 _____ -#3 _____ -#4 _____

pH-#1 7.57 -#2 _____ -#3 _____ -#4 _____

Recovery: A 0.0 B 0.01 time 8:00 @ 25.15

Sample Preservatives:

1000 ml, 8, w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow) _____
250 ml w/ HNO_3 (red), filtered _____
250 ml w/ NaOH (green) _____
500 ml w/ no preservative _____
40 ml, 2, w/ HCl (blue) _____

Comments (attach change of instrumentation information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number SANITATION, INC. Well Number SIMW-3 (SI-3 ON BOTTLES)

Sampler(s) SECOMUND

Date 6/3/97 Time 1115

Conditions WINDY, 65°

Field Data: Table (circle) (1) 2

Depth to Water 32.30 Total Depth 39.2

Volume of Water Purged

Temperature--#1 --#2 --#3 --#4

Conductivity--#1 959 --#2 --#3 --#4

pH--#1 7.67 --#2 --#3 --#4

Recovery: h_1 h_2 time

Sample Preservatives:

1000 ml, 6, w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow)
250 ml w/ HNO_3 (red), filtered
250 ml w/ NaOH (green)
500 ml w/ no preservative
40 ml, 2, w/ HCl (blue)

Comments (attach change of instrumentation information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Number/Name Sam James, Inc. Well Number S1MW-3
Sample(s) Groundwater
Date 6/3/94 Time 1115
Conditions Sunny, 65°

Field Data: Table (circle) 1 2

Depth to Water 32.30 Total Depth 39.2

Volume of Water Purged

Temperature--#1 --#2 --#3 --#4

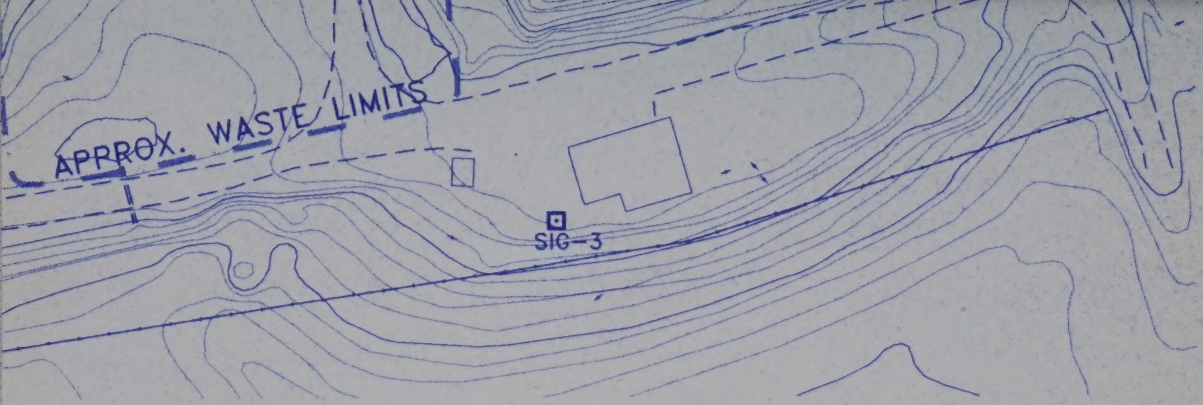
Conductivity--#1 95.7 --#2 --#3 --#4

pH--#1 7.67 --#2 --#3 --#4

Recovery: h h time

Sample Preservatives:
1000 ml, 6, w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow)
250 ml w/ HNO_3 (red), filtered
250 ml w/ NaOH (green)
500 ml w/ no preservative
40 ml, 2, w/ HCl (blue)

Comments (attach change of instrumentation information to this sheet if necessary):



PROJECT TITLE

SANITATION INC.

Lewistown, Montana

SHEET TITLE

Site Plan

MONTANA
BARRY E. DAMSCHEN 3837E
REGISTERED PROFESSIONAL ENGINEER

D&A

Damschen & Associates, Inc.

CONSULTING ENGINEERS

•2030 11th Ave., Suite 11•
•HELENA, MONTANA•

JOB/ACAD NUMBER 95-53	△			SHEET NO.
DRAWN BY B. LLOYD	△			1
APPROVED BY B. DAMSCHEN	△			
CHECKED BY B. SIEGMUND	△			of 1
DATE AUGUST, 1996	#	DATE	REVISION	

NC\PLAN95.DWG 7/17/97

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number Sabin Metals, Inc. Well Number S1MW-3
(S1-3 on Barrel)

Sampler(s) Spencer Wolz

Date 6/13/94 Time 1115

Conditions Sunny, 65°

Field Data: Table (circle) 1 2

Depth to Water 32.30 Total Depth 39.2

Volume of Water Purged

Temperature–#1 ____ –#2 ____ –#3 ____ –#4 ____

Conductivity–#1 95.7 –#2 ____ –#3 ____ –#4 ____

pH–#1 7.67 –#2 ____ –#3 ____ –#4 ____

Recovery: h ____ h ____ time ____

Sample Preservatives:

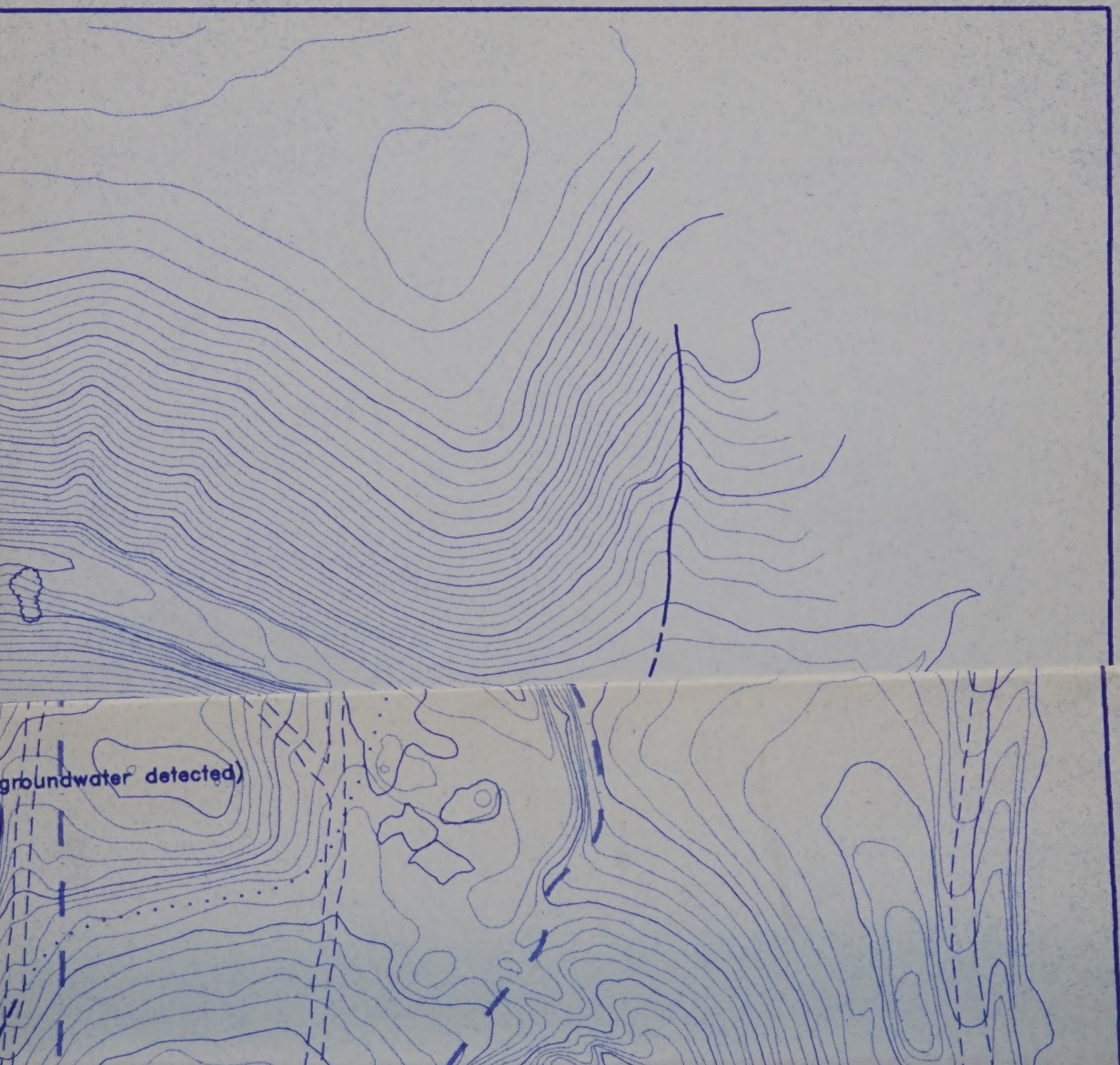
1000 ml, 6, w/ no preservative 1A/1 6
250 ml w/ H_2SO_4 (yellow) ____
250 ml w/ HNO_3 (red), filtered ____
250 ml w/ NaOH (green) ____
500 ml w/ no preservative ____
40 ml, 2, w/ HCl (blue) ____

Comments (attach change of instrumentation information to this sheet if necessary):

LEGEND

• SI-1	test boring (plugged)
▲ SIG-1	landfill gas monitoring well
⊡ SIP-1 (SWL=4100)	piezometer, showing static water level elevation
⊙ SIMW-1 (SWL=4100)	ground-water monitoring well, showing static water level elevation.
– – – – –	water table contour; interval two feet
4080 ——— – – · · ·	contact of carbonaceous grey clay shale with overlying sandstone, siltstone and shale; dashed where obscured; dotted where uncertain

topographic contour interval = 2 ft
groundwater measurements from 6/03/97


groundwater detected)

File

Fergus Co.
Sanitation Inc #291
grd wtr (ANALY)

D&A

DAMSCHEN & ASSOCIATES, INC.
CONSULTING ENGINEERS

2030 11TH AVENUE • SUITE 11
P.O. BOX 4817 • HELENA, MT 59604

TELEPHONE (406) 449-8627
FAX (406) 449-8631

February 21, 1997

Ms. Pat Potts
MDEQ Waste Management Division
P.O. Box 200901
Helena, MT 59620-0901

Dear Ms. Potts:

Enclosed please find the results of the Autumn, 1996 ground-water monitoring at the Class II solid waste landfill operated by Sanitation, Inc. in Lewistown, Montana. The initial Autumn event was attempted on October 22, 1996 and the piezometer SIP-2 was sampled on November 26, 1996.

You recall that the initial sampling event was not completed because insufficient water was available in monitoring well SIMW-1. After meeting with you at the site, we agreed to try collecting a sample from piezometer SIP-2, which is not far from SIMW-1 and screened within the same saturated zone.

Piezometer SIP-2

The sampling of the piezometer went very well. If you recall, piezometer SIP-2 was constructed of Schedule 40 1.25-inch collar-threaded PVC. The installation has three feet of hand-slotted screen intercepting the water-bearing zone. For the record, we sounded SIMW-1 prior to sampling SIP-2, and found the well to be dry. Piezometer SIP-2 proved to have about 2.5 feet of standing water, so it was outfitted with a 0.5-inch outer diameter inertial pump. The well was purged and sampled without incident. However, there are several aspects of this piezometer that have to be taken into consideration when reviewing the data. One is that this installation was not developed to the degree that most monitoring wells are, so the samples contained an inordinate amount of suspended fine-grained particulates. Also, the hand-cut slots do not allow for the relatively large open area found in commercial screens, so the recovery rate is probably not representative of the aquifer flow capacity. In spite of this, it looks as though we were able to extract reliable data from the samples that were collected. Several gallons of water were removed from the piezometer and it recovered fairly quickly. I purged the well dry several times after sampling in an attempt to clean it out and develop it to some small degree. Again, the hand-cut slots will not allow as much water through, so it may take some time to clear the fines from the sand filter pack.

It appears that reasonable results were obtained from the sample collected from SIP-2. This is discussed in greater detail in a subsequent portion of this submittal.

LEGEND

- test boring (plugged)
- landfill gas monitoring well
- piezometer, showing static water level elevation
- ground-water monitoring well, showing static water level elevation.
- water table contour; interval two feet
- contact of carbonaceous grey clay shale with overlying sandstone, siltstone and shale; dashed where obscured; dotted where uncertain

contour interval = 2 ft

r measurements from 6/03/97

NORTH

FEET

0 50 100 200

RECEIVED
JUL 24 1997
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

B:\PORBRUCE\SANITINC\PLAN95.DWG 7/17/97

PROJECT TITLE

SANITATION INC.

Lewistown, Montana

SHEET TITLE

Site Plan

MONTANA
BARRY E. DAMSCHEN
3837E
REGISTERED PROFESSIONAL ENGINEER

Damschen & Associates, Inc.
CONSULTING ENGINEERS
• 2030 11th Ave., Suite 11 •
• HELENA, MONTANA •

JOB/ACAD NUMBER	95-53		
DRAWN BY	B. LLOYD		
APPROVED BY	B. DAMSCHEN		
CHECKED BY	B. STEGMUND		
DATE	AUGUST, 1996	# DATE	REVISION

SHEET NO.
1
of 1

File: Fergus Co. Sanitation Inc #291 grd wtr (ANALY)

D&A
DAMSCHEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
2030 11TH AVENUE • SUITE 11
P.O. BOX 4817 • HELENA, MT 59604
TELEPHONE (406) 449-8627
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February 21, 1997

Ms. Pat Potts
MDEQ Waste Management Division
P.O. Box 200901
Helena, MT 59620-0901

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You recall that the initial sampling event was not completed because insufficient water was available in monitoring well SIMW-1. After meeting with you at the site, we agreed to try collecting a sample from piezometer SIP-2, which is not far from SIMW-1 and screened within the same saturated zone.

Piezometer SIP-2

The sampling of the piezometer went very well. If you recall, piezometer SIP-2 was constructed of Schedule 40 1.25-inch collar-threaded PVC. The installation has three feet of hand-slotted screen intercepting the water-bearing zone. For the record, we sounded SIMW-1 prior to sampling SIP-2, and found the well to be dry. Piezometer SIP-2 proved to have about 2.5 feet of standing water, so it was outfitted with a 0.5-inch outer diameter inertial pump. The well was purged and sampled without incident. However, there are several aspects of this piezometer that have to be taken into consideration when reviewing the data. One is that this installation was not developed to the degree that most monitoring wells are, so the samples contained an inordinate amount of suspended fine-grained particulates. Also, the hand-cut slots do not allow for the relatively large open area found in commercial screens, so the recovery rate is probably not representative of the aquifer flow capacity. In spite of this, it looks as though we were able to extract reliable data from the samples that were collected. Several gallons of water were removed from the piezometer and it recovered fairly quickly. I purged the well dry several times after sampling in an attempt to clean it out and develop it to some small degree. Again, the hand-cut slots will not allow as much water through, so it may take some time to clear the fines from the sand filter pack.

It appears that reasonable results were obtained from the sample collected from SIP-2. This is discussed in greater detail in a subsequent portion of this submittal.

Ground-water Flow

The water level in monitoring well SIMW-1 was very low in the Spring of 1996 and the well was essentially dry in October and November, 1996. Water levels have been falling continuously in all of the ground-water installations since August of 1995, when the monitoring wells were installed. The enclosed map represents the water flow as measured in November, 1996.

The loss of the measuring point at SIMW-1 affects the apparent flow of the ground water, skewing the equipotential lines to the northwest. With the reduced recharge from the east, this probably reflect an actual change in the gradient and direction of flow of the ground water. This is confirmed by examining the history of monitoring well SIMW-2 and piezometer SIP-2, which shows that the water level at SIP-2 has fallen to a greater degree than down-gradient at SIMW-2.

Assuming that the hydraulic conductivity has not changed significantly at well SIMW-2 and -3, the seepage velocity can be calculated using the data and assumptions initially applied to this facility. The initial calculations used at SIMW-2 were a hydraulic conductivity of 2.64 x 10^{-2} centimeters per second (cm/sec; 75 feet per day). The hydraulic gradient at this point is 0.03125 and the porosity is assumed to be 0.35 because of the generally poor sorting of the sediments. The seepage velocity at SIMW-2, then, can be calculated using

$$V_s = KI/n_e$$

as 2.36 x 10^{-3} cm/sec, or 6.7 feet per day. The hydraulic conductivity at SIMW-3 was measured at 5.14 x 10^{-3} cm/sec (14.6 ft/day) and the hydraulic gradient in the vicinity of the well is 0.05. Using the estimated porosity of 0.35, the seepage velocity can be calculated as 9.86 x 10^{-5} cm/sec or 0.28 ft/day. These flow rates are somewhat slower than those calculated for previous events due to the lower gradients measured in November, 1996.

Ground-water Quality

The samples taken October and November show results similar to those obtained in the two previous sampling events. As in previous events, low levels of volatile organic compounds (VOCs) were detected in the sample from monitoring well SIMW-2, including dichlorodifluoromethane (estimated at 0.23 micrograms per liter; µg/l) and trichlorofluoromethane (estimated at 0.15 µg/l). The sample from SIMW-3 contained no detectable levels of VOCs. The sample from SIP-2 contained small quantities of dichlorodifluoromethane (1.3 µg/l), 1,1-dichloroethane (estimated at 0.30 µg/l) and trichlorofluoromethane (estimated at 0.32 µg/l). Dichlorodifluoromethane and trichlorofluoromethane have been detected in samples from SIMW-1 in the past. Only the dichlorodifluoromethane found in SIP-2 exceeded the practical quantitation limit.

Inorganic parameters were also reported at levels comparable to previous samples. Nitrate concentrations anomalously high in all of the samples, but do not exceed the human health standard (HHS) of 10 milligrams per liter (mg/l) established by the State of Montana.

Piezometer SIP-2

Of particular interest in the most recently returned reports are the data from piezometer SIP-2. The purpose of sampling this installation was to determine if it is an appropriate location for sampling in lieu of monitoring well SIMW-1. Table 1 shows the results of inorganic analytes from the first sample taken from SIMW-1 and the sample taken from SIP-2. As you can see, they compare favorably with regard to general chemistry. As you are aware, laboratory analytical results will differ slightly from time to time in accordance with seasonal variations in ground-water chemistry or with slight changes in laboratory apparatus calibrations. Thus, the differences seen in between the two samples in Table 1 are probably insignificant. Perhaps the most significant differences between the two samples involve total dissolved solids and nitrate/nitrite nitrogen. The total dissolved solids in the sample from SIP-2 are slightly lower than in the SIMW-1 sample, and this is supported by the lower conductivity measurement in SIP-2. The difference in these two values is difficult to explain without considerable further analytical investigation, but it is probable that this simply represents spatial variation across the site. These sample sites are very close to or within the recharge zone, and may experience some differences in chemistry as a result of changes in water flow rates and volumes.

The difference in nitrate concentrations could also result from a number of circumstances, including simple seasonal or temporal changes and differing recharge sources. For example, monitoring well SIMW-1 may receive more recharge from the actively-grazed pasture that is underlain by carbonaceous shale. Ground water originating in such an environment may well be exposed to a higher nitrogen loading process than water moving from other areas.

One of the concerns regarding the use of this installation as a ground-water monitoring point is that the screen and riser were not constructed of pre-decontaminated pipe. The material was all steam cleaned prior to completion, but was never intended to be used for the purpose of water quality monitoring. It appears the PVC pipe and sand are not contributing any chemical substances that would interfere with the successful evaluation of ground-water quality.

The physical condition of piezometer SIP-2 appears to be good. It does not recharge very quickly, but none of the installations tested so far at this facility show exceptional permeability within the saturated zone. The water retrieved from SIP-2 contained considerable suspended particulates resulting from the lack of development typical to such installations. Because of the small diameter of the pipe and the relatively low flow, it may take some time to clear the filter pack of fines. However, we completed this installation in the same fashion as we did the monitoring wells, so it should perform adequately for the collection of samples.

It appears that piezometer SIP-2 was constructed and maintained appropriately, and may be used successfully as a water-quality monitoring point at the Sanitation, Inc. facility. The only aspect of the piezometer that needs improvement is well development. The suspended silt can probably be cleared from the system in time with continued sampling and development efforts. The diameter of the riser makes surging difficult, but over-pumping and additional

purging should clear up the water in time.

Assuming that SIP-2 is a reasonable sampling point, the question now becomes one of how we should approach the problem of insufficient water in monitoring well SIMW-1. I see two possibilities: Either abandon SIMW-1 altogether in favor of using SIP-2 or use SIMW-1 as the primary sampling point and sample SIP-2 when water levels drop. The first option might allow for a more consistent statistical application in the future, because all of the data would be derived from a single sampling point and the data base would be more in line with monitoring wells SIMW-2 and -3. The second option might be preferable because it was the initial sampling point, and more data are currently available for analysis, and the well was completed with ground-water sampling in mind. Our decision may be made for us if water levels continue to remain at current levels. With fewer than two years of observation available, it is too early to establish the range of ground-water flow possible within this system. If the monitoring wells were installed during a period of exceptional recharge, we may be forced to use SIP-2 by default. We would appreciate your input on this matter so that we may develop the proper approach in the Sampling and Analysis Plan.

I hope this provides a sufficient review of the situation at the Sanitation, Inc. facility. We are confident that the ground-water characterization is enhanced by the additional analyses, and that additional time and monitoring events will allow for a good understanding of the ground-water system at this site. However, if you have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,

DAMSCHEN & ASSOCIATES, INC.

Bruce L. Siegmund
Project Hydrogeologist

Enclosures
CC: Sanitation, Inc., Lewistown, Montana

Table 1. Comparison of inorganic analytes from samples taken from ground-water monitoring well SIMW-1 and piezometer SIP-2, Sanitation, Inc. Class II landfill, Lewistown, Montana.

Analyte	SIMW-1	SIP-2
potassium (mg/l)	3	4
sodium (mg/l)	21	18
calcium (mg/l)	109	94
magnesium (mg/l)	40	39
sulfate (mg/l)	95	95
chloride (mg/l)	26	28
bicarbonate (mg/l)	427	363
total dissolved solids (mg/l)	510	388
specific conductance (umhos/cm)	958	822
pH (standard units)	7	6.9
nitrate + nitrite N (mg/l)	4.49	1.79

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

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NOV - 6 1996
DAMSCHEN & ASSOCIATES

LABORATORY REPORT

TO: Bruce Siegmund
ADDRESS: Damschen & Associates
P.O. Box 4817
Helena, MT 59604

LAB NO.: 96-62399
DATE: 11/05/96 lm

WATER ANALYSIS

Sanitation, Inc., Lewistown, MT, SIMW-2
Sampled 10/22/96 @ 0930
Submitted 10/25/96

Constituent	mg/l (ppm)	Date Analyzed
Potassium	3	10/30/96
Sodium	40	10/30/96
Calcium	152	10/30/96
Magnesium	51	10/30/96
Sulfate	214	10/31/96
Chloride	62	10/31/96
Carbonate	0	10/31/96
Bicarbonate	436	10/31/96
Total Dissolved Solids @ 180° C	728	11/01/96
Total Hardness as $CaCO_3$	590	10/30/96
Total Alkalinity as $CaCO_3$	357	10/31/96
Specific Conductance @ 25° C	1180 µmhos/cm	10/25/96
pH	7.2 s.u.	10/25/96
Ammonia as N	<0.1	10/25/96
Nitrate plus Nitrite as N	2.60	10/25/96
Total Cyanide	<0.005	10/28/96
Chemical Oxygen Demand	7	10/29/96
Dissolved Metals		
Antimony	<0.05	10/28/96
Arsenic	<0.005	10/29/96
Barium	<0.1	10/28/96
Beryllium	<0.001	10/28/96
Cadmium	<0.001	10/28/96
Chromium	<0.01	10/28/96
Cobalt	<0.01	10/28/96
Copper	<0.01	10/28/96
Iron	1.29	10/28/96
Lead	<0.01	10/28/96
Mercury	<0.001	10/31/96
Nickel	<0.01	10/28/96
Selenium	<0.005	10/30/96
Silver	<0.005	10/28/96
Thallium	<0.1	10/28/96
Vanadium	<0.1	10/28/96
Zinc	0.03	10/28/96

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P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled: 22-OCT-96 09:30
Date Received: 25-OCT-96
Analysis Date: 29-OCT-1996 15:31
File: /chem/5971A.i/va102996.b/oct290901009.d
Project Info: Sanitation, Inc., Lewistown, MT
Sample Info: SIMW-2

Lab No.: 96-62399
Report Date: 11/01/96 13:46
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	**75-71-8**	**<1.0**	**0.23J**
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

KVA SYSTEMS 8160
VOLATILE ORGANICS ANALYSIS REPORT

Client: Dauphin and Associates, Inc.
Date Sampled: 22-OCT-96 09:30
Date Received: 23-OCT-96
Analysis Date: 29-OCT-1996 15:11
File: /chem/5971A.I/MAIN/VOC/1970103.D
Project Info: Contractor, Inc., Dewitown, MT
Sample Info: 4PM-1

Lab No.: 96-61355
Report Date: 11/01/96 13:46
Extraction Method: EPA 5030
Sample Matrix: WATER; pH: < 2

CONCENTRATION UNITS - ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<5.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<5.0	U
Dichlorodifluoromethane	75-71-8	<1.0	0.242
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	**75-69-4**	**<1.0**	**0.15J**
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.80	98	80--120
Toluene d8	10.0	10.4	104	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: CS Reviewing Supervisor: MB

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Bruce Siegmund
ADDRESS: Damschen & Associates
P.O. Box 4817
Helena, MT 59604

LAB NO.: 96-62400
DATE: 11/05/96 lm

WATER ANALYSIS

Sanitation, Inc., Lewistown, MT, SIMW-3
Sampled 10/22/96 @ 1030
Submitted 10/25/96

Constituent	mg/l (ppm)		Date Analyzed
Potassium	2		10/30/96
Sodium	24		10/30/96
Calcium	93		10/30/96
Magnesium	35		10/30/96
Sulfate	133		10/31/96
Chloride	34		10/31/96
Carbonate	0		10/31/96
Bicarbonate	256		10/31/96
Total Dissolved Solids @ 180° C	461		11/01/96
Total Hardness as $CaCO_3$	376		10/30/96
Total Alkalinity as $CaCO_3$	210		10/31/96
Specific Conductance @ 25° C	706	µmhos/cm	10/25/96
pH	7.3	s.u.	10/25/96
Ammonia as N	<0.1		10/25/96
Nitrate plus Nitrite as N	9.09		10/25/96
Total Cyanide	<0.005		10/28/96
Chemical Oxygen Demand	5		10/29/96
Dissolved Metals			
Antimony	<0.05		10/28/96
Arsenic	<0.005		10/29/96
Barium	<0.1		10/28/96
Beryllium	<0.001		10/28/96
Cadmium	<0.001		10/28/96
Chromium	<0.01		10/28/96
Cobalt	<0.01		10/28/96
Copper	<0.01		10/28/96
Iron	0.03		10/28/96
Lead	<0.01		10/28/96
Mercury	<0.001		10/31/96
Nickel	<0.01		10/28/96
Selenium	0.019		10/30/96
Silver	<0.005		10/28/96
Thallium	<0.1		10/28/96
Vanadium	<0.1		10/28/96
Zinc	<0.01		10/28/96

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 2393 SALT CREEK HIGHWAY (82601) • CASPER, WYOMING 82604
(307) 235-0515 • 1-800-442-7234
FAX (307) 234-1639 • 1-800-735-4489

LABORATORY REPORT

TO: Bruce Sherwood
ADDRESS: Damstrom & Associates
P.O. Box 4917
Helena, MT 59604

LAB NO.: 96-0740
DATE: 11/05/96

WATER ANALYSIS

Sanitation, Inc., Lewistown, MT, SIMW 3
Sampled 10/23/96 @ 1030
Submitted 10/25/96

Constituent	mg / liter	Date Analyzed
Potassium	2	10/30/96
Sodium	24	10/30/96
Calcium	85	10/30/96
Magnesium	35	10/30/96
Sulfate	133	10/31/96
Chloride	34	10/31/96
Carbonate	0	10/31/96
Bicarbonate	229	10/31/96
Total Dissolved Solids @ 180° C	465	11/01/96
Total Hardness as $CaCO_3$	375	10/30/96
Total Alkalinity as $CaCO_3$	375	10/31/96
Specific Conductance @ 25° C	709 µmhos/cm	10/31/96
pH	7.8 s.u.	10/25/96
Ammonia as N	<0.1	10/28/96
Nitrate plus Nitrite as N	0.06	10/28/96
Total Cyanide	<0.005	10/28/96
Chemical Oxygen Demand	2	10/29/96

Dissolved Metals		
Antimony	<0.05	10/29/96
Arsenic	<0.005	10/29/96
Barium	<0.1	10/28/96
Beryllium	<0.001	10/28/96
Cadmium	<0.001	10/28/96
Chromium	<0.01	10/28/96
Cobalt	<0.01	10/28/96
Copper	<0.01	10/28/96
Iron	0.03	10/28/96
Lead	<0.01	10/28/96
Mercury	<0.001	10/31/96
Nickel	<0.01	10/28/96
Selenium	0.018	10/30/96
Silver	<0.005	10/28/96
Thallium	<0.1	10/28/96
Vanadium	<0.1	10/28/96
Zinc	<0.01	10/28/96

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FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled: 22-OCT-96 10:30
Date Received: 25-OCT-96
Analysis Date: 29-OCT-1996 16:06
File: /chem/5971A.i/va102996.b/oct291001010.d
Project Info: Sanitation, Inc., Lewistown, MT
Sample Info: SIMW-3

Lab No.: 96-62400
Report Date: 11/01/96 13:46
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

Client: Brewster and Associates, Inc.
Date Sampled: 22-OCT-96 10:30
Date Received: 23-OCT-96
Analysis Date: 23-OCT-1996 16:00
File: /dmsa/3V31A.i/ms102396.b/ucs2310310.d
Project Info: Sandiaville, Ill., Landfarm. MT
Sample Info: Slow-2

Lab ID.: 96-6260
Report Date: 11/01/96 13:46
Extraction Method: 5ZA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

COMPOUNDS	CAS NO.	CONCENTRATION UNITS = ug/L (ppb) RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,2,4-Trichlorobenzene	120-82-1	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.60	96	80--120
Toluene d8	10.0	10.4	104	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: SP Reviewing Supervisor: MB

ENERGY LABORATORIES, INC.
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Client: Damschen and Associates, Inc.
Date Sampled:
Date Received: 25-OCT-96
Analysis Date: 29-OCT-1996 12:34
File: /chem/5971A.i/va102996.b/oct290501005.d
Project Info: Sanitation, Inc., Lewistown, MT
Sample Info: Trip Blank

Lab No.: 96-62401
Report Date: 11/01/96 13:46
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

Client: Dameron and Associates, Inc.
Date Sampled:
Date Received: 23-OCT-96
Analysis Date: 23-OCT-1996 12:34
File: /dam/55712A.3/va102396.b/ok2396010005.d
Project Info: Ensirestion, Inc., Lewisville, AZ
Sample Info: Trip Blank

Lab No.: 96-02403
Report Date: 11/01/96 - 12:46
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS RESULTS

COMPOUND	CAS NO.	CONCENTRATION UNITS = ug/L (ppb) RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.65	97	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	9.75	98	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CO Reviewing Supervisor: MM

Quality Control Sample: Laboratory Reagent Blank 29-OCT-96 10:42
Report Date: 10/29/96 13:21
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va102996.b/oct290301003.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

Quality Control Sample: Laboratory Reagent Blank 19-OCT-96 16:41
Report Date: 10/23/96 12:11
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/37VIA.i/va10292.b/oct29960102.d
Remark: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUND	CAS NO.	RESULT	QUALIFIERS
Acetone	67-64-1	<30	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<5.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Methane	74-82-8	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<2.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,2,3-Trichlorobenzene	87-61-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.70	97	80--120
Toluene d8	10.0	9.76	98	80--120
p-Bromofluorobenzene	10.0	9.25	92	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: GO Reviewing Supervisor: MB

Lab Nos. 96-62399-400

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Constituent	Duplicate Analysis -------mg/l (ppm)------- Original	Duplicate	Spiked Analysis, % Recovery	Blank Analysis, mg/l (ppm)	-----Calibration Verification----- Sample Analysis, mg/l (ppm)	Acceptance Range, mg/l (ppm)	Date Analyzed
Potassium	4	4	106	<1	21	18-22	10/30/96
Sodium	18	18	110	<1	49	45-55	10/30/96
Calcium	130	135	103	<1	47	45-55	10/30/96
Magnesium	37	38	102	<1	49	45-55	10/30/96
Sulfate	2820	2810	98	<1	327	286-350	10/31/96
Chloride	5	5	103	<1	78	69-85	10/31/96
Total Dissolved Solids @ 180° C	508	511	102	<10	N/A	N/A	11/01/96
Total Alkalinity as $CaCO_3$	57	56	97	2	105	85-115	10/31/96
Specific Conductance @ 25° C, µmhos/cm	167	169	N/A	1	N/A	N/A	10/25/96
pH, s.u.	7.0	6.9	N/A	N/A	N/A	N/A	10/25/96
Ammonia as N	<0.1	<0.1	90	<0.1	2.3	1.8-2.5	10/25/96
Nitrate plus Nitrite as N	2.61	2.58	98	<0.05	1.51	1.35-1.68	10/25/96
Total Cyanide	<0.005	<0.005	106	<0.005	0.210	0.139-0.271	10/28/96
Chemical Oxygen Demand	18	17	98	<1	39	23-43	10/29/96
Dissolved Metals							
Antimony	<0.05	<0.05	110	<0.05	1.02	0.90-1.10	10/28/96
Arsenic	<0.005	<0.005	98	<0.005	0.026	0.019-0.031	10/29/96
Barium	<0.1	<0.1	101	<0.1	1.0	0.9-1.1	10/28/96
Beryllium	<0.001	<0.001	107	<0.001	1.01	0.900-1.10	10/28/96
Cadmium	<0.001	<0.001	104	<0.001	0.975	0.900-1.10	10/28/96
Chromium	<0.01	<0.01	99	<0.01	0.96	0.90-1.10	10/28/96
Cobalt	<0.01	<0.01	98	<0.01	0.95	0.90-1.10	10/28/96
Copper	<0.01	<0.01	99	<0.01	0.99	0.90-1.10	10/28/96
Iron	1.29	1.34	100	<0.03	0.96	0.90-1.10	10/28/96
Lead	<0.01	<0.01	103	<0.01	0.97	0.90-1.10	10/28/96
Mercury	<0.001	<0.001	93	<0.001	0.001	0.001-0.002	10/31/96
Nickel	<0.01	<0.01	98	<0.01	0.96	0.90-1.10	10/28/96
Selenium	<0.005	<0.005	93	<0.005	0.041	0.036-0.056	10/30/96
Silver	<0.005	<0.005	103	<0.005	0.991	0.900-1.10	10/28/96
Thallium	<0.1	<0.1	96	<0.1	1.0	0.9-1.1	10/28/96
Vanadium	<0.1	<0.1	100	<0.1	1.0	0.9-1.1	10/28/96
Zinc	0.03	0.02	98	<0.01	1.03	0.90-1.10	10/28/96

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analysis. They are continued to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Constituent	Duplicate Analysis (mg/L ppm) Original	Duplicate	Spiked Analysis % Recovery	Blank Analysis mg/L ppm	Sample Analysis mg/L ppm	Calibration Verification Acceptance Range mg/L ppm	Date Analyzed
Potassium	4	4	108	<1	21	18-22	10/26/96
Sodium	18	18	110	<1	49	46-58	10/26/96
Calcium	120	122	102	<1	47	44-53	10/26/96
Magnesium	37	38	107	<1	49	46-56	10/26/96
Sulfate	2820	2810	98	<1	[illegible]	198-260	10/17/96
Chloride	8	8	103	<1	78	69-86	10/17/96
Total Dissolved Solids @ 180° C	608	611	102	<10	N/A	N/A	11/01/96
Total Alkalinity as $CaCO_3$	57	58	107	2	104	95-110	10/17/96
Specific Conductance @ 25° C	127	128	N/A	1	N/A	N/A	10/23/96
Ammonia							
pH s.u.	7.0	6.8	N/A	N/A	N/A	N/A	10/25/96
Ammonia as N	<0.1	<0.1	80	<0.1	2.2	1.8-2.5	10/29/96
Nitrate plus Nitrite as N	2.61	2.59	99	<0.05	1.21	1.08-1.48	10/23/96
Total Cyanide	<0.005	<0.005	100	<0.005	0.173	0.113-0.223	10/28/96
Chemical Oxygen Demand	18	17	90	<1	39	27-43	10/23/96
Dissolved Metals							
Antimony	<0.05	<0.05	110	<0.05	1.05	0.95-1.10	10/28/96
Arsenic	<0.005	<0.005	98	<0.005	0.019	0.017-0.021	10/29/96
Barium	<0.1	<0.1	101	<0.1	1.0	0.8-1.2	10/28/96
Beryllium	<0.001	<0.001	107	<0.001	1.01	0.90-1.10	10/28/96
Cadmium	<0.001	<0.001	105	<0.001	0.272	0.225-0.310	10/28/96
Chromium	<0.01	<0.01	93	<0.01	0.98	0.90-1.10	10/28/96
Cobalt	<0.01	<0.01	96	<0.01	0.95	0.90-1.10	10/28/96
Copper	<0.01	<0.01	98	<0.01	0.99	0.90-1.10	10/28/96
Iron	1.28	1.34	100	<0.05	0.98	0.90-1.10	10/28/96
Lead	<0.01	<0.01	102	<0.01	0.97	0.90-1.10	10/28/96
Mercury	<0.001	<0.001	95	<0.001	0.0021	0.0017-0.0025	10/29/96
Nickel	<0.01	<0.01	99	<0.01	0.96	0.90-1.10	10/28/96
Selenium	<0.005	<0.005	95	<0.005	0.091	0.085-0.098	10/30/96
Silver	<0.005	<0.005	102	<0.005	0.091	0.080-0.110	10/28/96
Thallium	<0.1	<0.1	98	<0.1	1.2	0.8-1.1	10/28/96
Vanadium	<0.1	<0.1	105	<0.1	1.0	0.8-1.1	10/28/96
Zinc	0.05	0.05	99	<0.01	1.02	0.90-1.10	10/28/96

EPA METHOD 8260 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 28-OCT-96 16:43
Report Date: 10/31/96 10:11
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va102896.b/oct281101011.d
Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	5.33	107	60--140
Chlorobenzene	5.00	4.90	98	60--140
1,3-Dichlorobenzene	5.00	4.89	98	60--140
1,4-Dichlorobenzene	5.00	4.87	97	60--140
1,2-Dichloroethane	5.00	4.35	87	60--140
1,1-Dichloroethene	5.00	4.48	90	60--140
trans-1,2-Dichloroethene	5.00	4.76	95	60--140
1,2-Dichloropropane	5.00	5.66	113	60--140
Ethyl benzene	5.00	5.29	106	60--140
Tetrachloroethene	5.00	4.29	86	60--140
1,1,2-Trichloroethane	5.00	5.22	104	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.47	95	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	9.82	98	80--120

REPORT COMMENTS: None

Analyst: Co Reviewing Supervisor: MAY

EPA METHOD 8260 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 29-OCT-96 16:43
Report Date: 10/31/96 10:33
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /dmx/5971A.i/vol0299.b/ocb2311010i3.d
Remarks: This certified reference sample was spiked into a plain sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

Spike Compound	CONCENTRATION UNITS = ug/L (ppb) Added	Recovered	Recov	QC Limits
Carbon tetrachloride	5.00	5.24	107	60--140
Chlorobenzene	5.00	4.90	98	60--140
1,2-Dichlorobenzene	5.00	4.89	98	60--140
1,4-Dichlorobenzene	5.00	4.87	97	60--140
1,2-Dichloroethane	5.00	4.75	95	60--140
1,1-Dichloroethene	5.00	4.69	94	60--140
trans-1,2-Dichloroethene	5.00	4.76	95	60--140
1,2-Dichloropropane	5.00	5.68	114	60--140
Ethyl Benzene	5.00	5.19	104	60--140
Tetrachloroethene	5.00	4.59	92	60--140
1,2,4-Trichlorobenzene	5.00	5.25	105	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	Recov	QC Limits
1,2-Dichloroethane d4	10.0	9.45	95	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	9.88	99	80--120

REPORT COMMENTS: None

Analyst: CG Reviewing Supervisor: [illegible]

EPA METHOD 8260 MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 01-NOV-96 12:35
Lab No.: 96-62400MS
Report Date: 11/01/96 13:42
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va110196.b/nov010501005.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Benzene	10.0	<1.00	10.7	107	60--140
Chlorobenzene	10.0	<1.00	10.2	102	60--140
1,1-Dichloroethene	10.0	<1.00	8.85	88	60--140
Toluene	10.0	<1.00	10.7	107	60--140
Trichloroethene	10.0	<1.00	9.51	95	60--140

EPA METHOD 8260 MATRIX SPIKE DUPLICATE REPORT

Quality Control Sample: Matrix Spike Duplicate Analysis 01-NOV-96 13:10
Lab No.: 96-62400MSD
File: /chem/5971A.i/va110196.b/nov010601006.d
Remarks: These compounds were again spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD %Rec	%RPD	---QC Limits-- RPD	Rec
Benzene	10.0	9.89	99	7.9	11	60--140
Chlorobenzene	10.0	9.87	99	3.3	13	60--140
1,1-Dichloroethene	10.0	8.68	87	1.9	14	60--140
Toluene	10.0	10.5	105	1.9	13	60--140
Trichloroethene	10.0	9.32	93	2.0	14	60--140

REPORT COMMENTS: The sample was diluted by 2 times before spiking.

Analyst: CD Reviewing Supervisor: [illegible]

EPA METHOD 8260 MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 01-NOV-95 12:35
Lab No.: 95-6140GMS
Report Date: 11/01/95 12:41
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5/VIA.1/vail0195.b/nov0100095.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Concentration	MS Recovery	QC Limits Rec
Benzene	10.0	11.00	110	60--140
Chlorobenzene	10.0	11.00	110	60--140
1,1-Dichloroethene	10.0	9.80	98	60--140
Toluene	10.0	10.70	107	60--140
Trichloroethene	10.0	9.50	95	60--140

EPA METHOD 8260 MATRIX SPIKE DUPLICATE REPORT

Quality Control Sample: Matrix Spike Duplicate Analysis 01-NOV-95 12:10
Lab No.: 95-6140GMS
File: /chem/5/VIA.1/vail0195.b/nov0100095.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD Recovery	RPD	QC Limits Rec
Benzene	10.0	9.80	98	3.5	60--140
Chlorobenzene	10.0	9.90	99	4.3	60--140
1,1-Dichloroethene	10.0	8.90	89	1.3	60--140
Toluene	10.0	12.0	120	3.5	60--140
Trichloroethene	10.0	9.00	90	5.0	60--140

REPORT COMMENTS: The sample was diluted by 2 times before spiking.

Analyst: CS Reviewing Supervisor: [illegible]

Lab Nos.: 96-62399 - 96-62401

Date: 25-OCT-96

Received by: Anne Zankowski

Logged In by: Randa Hoelscher

SAMPLE CONDITION QA/QC REPORT

This report provides information about the condition of the sample(s) and associated sample custody information on receipt at the laboratory.

Chain of Custody Form Completed & Signed	Yes	Comments:
Chain of Custody Seal	No	Comments:
Intact	N/A	Comments:
Signature Match Chain of Custody vs. Seal	N/A	Comments:
Samples Received Cold	Yes	Comments:
Samples Received Within Holding Time	Yes	Comments:
Samples Received in Proper Containers	Yes	Comments:
Samples Received Properly Preserved	Yes	Comments:

Samples requiring analysis for volatile organics are tested for proper preservation at the time of analysis. Any preservation problems encountered for these samples are noted on the analytical parameter report pages.

Client notified about sample discrepancies:

Who: _____ By: _____ Date/Time: _____

Method of Shipping: Hand Del.

Additional comments: _____

ENERGY LABORATORIES, INC
P.O. Box 30916 1120 South 27th Street
Billings, Montana 59107
toll-free 800-735-4489
voice 406-252-6325
fax 406-252-6069

CHAIN OF CUSTODY RECORD

PLEASE PRINT OR TYPE ALL INFORMATION EXCEPT SIGNATURES

P.O. #

Project Name / Address: SANITATION, INC, LEWISTOWN MT

Contact Name & Phone: BRUCE SIEGMUND 406 449-8627

Sampler's signature: Bruce Siegmund

Invoice to: DAMSCHEN + ASSOC. PO BOX 4817 HELENA MT 59604

Report to: DAMSCHEN

Sample Type: A W S V U O (Air Water Soils/solids Vegetation Urine Other)

Analysis Requested: MT SOLID WASTE TABLE 1; DOMESTIC WATER, Ammonia N

DATE	TIME	composite	grab sample	SAMPLE I.D.	number of containers	MT SOLID WASTE TABLE 1	DOMESTIC WATER, Ammonia N							Comments, Special Instructions, etc.
10/22/96	0930		X	SIMW-2	6W	X	X							
"	1030		X	SIMW-3	6W	X	X							
				TRIP BLANK										

1. Relinquished (signature)	Date	Time	Received by: (signature)	3. Relinquished (signature)	Date	Time	Received by (signature):
Bruce Siegmund	10/25/96	1045					

2. Relinquished (signature)	Date	Time	Received by: (signature)	4. Relinquished (signature)	Date	Time	Received for laboratory by (signature):
					10/25/96	1044	Anne Zankowski

CHAIN OF CUSTODY RECORD

ENERGY LABORATORIES INC.
P.O. BOX 30916
BILLINGS, MONTANA 59107-0916
PHONE NUMBER (406) 252-6325
FAX NUMBER (406) 252-6069

PLEASE PRINT OR TYPE ALL
INFORMATION EXCEPT SIGNATURES.

P.O. #
PROJECT NAME / NUMBER
CHEVRON INC. PERMIAN INC
PROJECT MANAGER / PHONE:
BRUCE DIETRICH
SAMPLER (SIGNATURE):
DATE: MAY 25
SAMPLING LOCATION:
DIRECT HOT + BZ200
HASSLER NEW SUPER
PO BOX 1814
SAMPLE DESCRIPTION
DATE
TIME
MATRIX
SAMPLE TYPE
PRESERVATIVE
CONTAINER
SAMPLE ID
CHRIS GRAHAM
1
GRAB
W
CHRIS - 3
2
GRAB
W
CHRIS - 5

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	5/25	1042	[signature]	5/25	1042

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME
[signature]	5/25	1042

SAMPLE RECEIPT
TOTAL # OF CONTAINERS
CUSTODY SEALS
SEALS INTACT
COOLER TEMP. (°C)
REMARKS:
INSTRUCTIONS:
ANALYSIS REQUESTED
CHAIN OF CUSTODY SEALS
INTACT? (Y/N/NA)

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

To : Damschen & Associates, Inc.
Address : Bruce Siegmund
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 96-68799 kr
Date : 12/16/96

WATER ANALYSIS REPORT

Sanitation Inc. Landfill, Lewistown, MT
SIP-2

Sample Date : 11/26/96
Sample Time : 1345
Sample Received : 12/03/96

Constituents	Results	Units	Remarks	Ref.	Method	--Analysis-- Date	Time	By
Potassium	4	mg/l		EPA	200.7	12/04/96	1704	JH
Sodium	18	mg/l		EPA	200.7	12/04/96	1704	JH
Calcium	94	mg/l		EPA	200.7	12/04/96	1704	JH
Magnesium	39	mg/l		EPA	200.7	12/04/96	1704	JH
Sulfate	95	mg/l		EPA	300.0	12/04/96	1630	SKW
Chloride	28	mg/l		EPA	300.0	12/04/96	1630	SKW
Carbonate as CO3	0	mg/l		EPA	310.1	12/05/96	0807	SKW
Bicarbonate as HCO3	363	mg/l		EPA	310.1	12/05/96	0807	SKW
Solids Dissolved @ 180 degrees C	388	mg/l		EPA	160.1	12/03/96	0800	NB
Total Hardness as CaCO3	394	mg/l		EPA	200.7	12/04/96	1704	JH
Alkalinity,Total as CaCO3,pH 4.5	298	mg/l		EPA	310.1	12/05/96	0807	SKW
Conductivity, @ 25 degrees C	822	µmhos/cm		EPA	120.1	12/03/96	1421	BAS
pH @ 25 degrees C	6.9	s.u.		EPA	150.1	12/03/96	1421	BAS
Nitrate plus Nitrite as N	1.79	mg/l		EPA	353.2	12/04/96	1117	SS
Nitrogen,Ammonia	<0.1	mg/l		EPA	350.1	12/04/96	1117	SS
Chemical Oxygen Demand	11	mg/l		EPA	410.4	12/06/96	1135	BS
Cyanide, Total	<0.005	mg/l		EPA	335.3	12/04/96	1100	NB
Antimony, Dissolved	<0.05	mg/l		EPA	200.7	12/04/96	1054	RLH
Arsenic,Dissolved	<0.005	mg/l		EPA	200.9	12/04/96	1505	JH
Barium, Dissolved	<0.1	mg/l		EPA	200.7	12/04/96	1054	RLH
Beryllium, Dissolved	<0.001	mg/l		EPA	200.7	12/04/96	1054	RLH
Cadmium,Dissolved	<0.001	mg/l		EPA	200.7	12/04/96	1054	RLH
Chromium,Dissolved	<0.01	mg/l		EPA	200.7	12/04/96	1054	RLH
Cobalt, Dissolved	<0.01	mg/l		EPA	200.7	12/04/96	1054	RLH
Copper,Dissolved	<0.01	mg/l		EPA	200.7	12/04/96	1054	RLH
Iron,Dissolved	0.15	mg/l		EPA	200.7	12/04/96	1054	RLH
Lead,Dissolved	<0.01	mg/l		EPA	200.9	12/04/96	1054	RLH
Mercury, Dissolved	<0.001	mg/l		EPA	245.2	12/04/96	1300	FMB
Nickel, Dissolved	0.01	mg/l		EPA	200.7	12/04/96	1054	RLH
Selenium, Dissolved	0.006	mg/l		EPA	270.3	12/12/96	1045	LH
Silver, Dissolved	<0.005	mg/l		EPA	200.7	12/04/96	1054	RLH
Thallium, Dissolved	<0.1	mg/l		EPA	200.7	12/04/96	1054	RLH
Vanadium, Dissolved	<0.1	mg/l		EPA	200.7	12/04/96	1054	RLH
Zinc, Dissolved	0.02	mg/l		EPA	200.7	12/04/96	1054	RLH

ENERGY LABORATORIES, INC.

LABORATORY REPORT

To : Bausch & Associates, Inc.
Address : Bruce Stanford
P.O. Box 4817
Helena, MT 59604-4817

Lab No. : 96-08739 Ar
Date : 12/18/96

WATER ANALYSIS REPORT
Sanitation Inc. Landfill, Lewistown, MT
SIP-2

Sample Date 11/26/96
Sample Time 1245
Sample Received 12/09/96

Constituents	Results	Units	Tests	Rpt	Method	Date	Time	By
Analysis:								
Potassium	[illegible]	mg/L		[illegible]	[illegible]	12/17/96	1704	JH
Sodium	[illegible]	mg/L		[illegible]	[illegible]	12/17/96	1704	JH
Calcium	[illegible]	mg/L		[illegible]	[illegible]	12/17/96	1704	JH
Magnesium	[illegible]	mg/L		[illegible]	[illegible]	12/17/96	1704	JH
Sulfate	[illegible]	mg/L		[illegible]	[illegible]	12/09/96	1500	SRM
Chloride	[illegible]	mg/L		[illegible]	[illegible]	12/09/96	1520	SRM
Carbonate as CaCO3	[illegible]	mg/L		[illegible]	[illegible]	12/09/96	1000	SRM
Bicarbonate as HCO3	[illegible]	mg/L		[illegible]	[illegible]	12/09/96	1000	SRM
Solids Dissolved @ 180 degrees C	[illegible]	mg/L		[illegible]	[illegible]	12/09/96	0800	AB
Total Hardness as CaCO3	[illegible]	mg/L		[illegible]	[illegible]	12/17/96	1704	JH
Alkalinity, Total as CaCO3 to 4.5	[illegible]	mg/L		[illegible]	[illegible]	12/09/96	0900	SRM
Conductivity, @ 25 degrees C	[illegible]	µmhos/cm		[illegible]	[illegible]	12/09/96	1400	SRM
pH @ 25 degrees C	[illegible]	s.u.		[illegible]	[illegible]	12/09/96	1400	SRM
Nitrate plus Nitrite as N	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1127	SS
Nitrogen, Ammonia	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1127	SS
Chemical Oxygen Demand	11	mg/L		[illegible]	[illegible]	12/06/96	1135	SS
Cyanide, Total	[illegible]	mg/L		[illegible]	[illegible]	12/24/96	1100	MB
Antimony, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/24/96	1004	MLH
Arsenic, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/09/96	1500	JH
Barium, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Beryllium, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1050	MLH
Cobalt, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Chromium, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Copper, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Iron, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Lead, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1050	MLH
Mercury, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1050	MLH
Nickel, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Selenium, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Silver, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Thallium, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Vanadium, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH
Zinc, Dissolved	[illegible]	mg/L		[illegible]	[illegible]	12/04/96	1124	MLH

Lab No(s). 96-68799 - 96-68799

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Constituents		Duplicate Analysis --- mg/l (ppm) --- Original	Duplicate	Spiked Analysis % Recovery	Blank Analysis, mg/l ppm	------ Reference ------ Sample Analysis, mg/l ppm	Accept Range mg/l ppm	Date Analyzed
Potassium		2	2	99	<1	20	18-22	04-DEC-96
Sodium		17	16	99	<1	49	45-55	04-DEC-96
Calcium		48	48	97	<1	49	45-55	04-DEC-96
Magnesium		14	13	96	<1	49	45-55	04-DEC-96
Sulfate		<1	<1	96	<1	319	286-350	04-DEC-96
Chloride		<1	<1	92	<1	75	69-85	04-DEC-96
Total Dissolved Solids		2160	2150	105	<10	N/A	N/A	03-DEC-96
Alkalinity		3170	3180	102	2	104	85-115	05-DEC-96
Specific Conductance @ 25	umhos/cm	1	1	N/A	1	N/A	N/A	03-DEC-96
pH	s.u.	6.9	7.0	N/A	N/A	N/A	N/A	03-DEC-96
Ammonia as N		<0.1	<0.1	97	<0.1	2.2	1.8-2.5	04-DEC-96
Nitrate plus Nitrite as N		36.0	35.6	89	<0.05	1.47	1.35-1.68	04-DEC-96
Total Cyanide		<0.005	<0.005	102	<0.005	0.214	0.139-0.271	04-DEC-96
Chemical Oxygen Demand		47	49	90	<1	40	23-43	06-DEC-96
Dissolved Metals								
Antimony		<0.05	<0.05	106	<0.05	1.05	0.90 - 1.10	04-DEC-96
Arsenic		<0.005	<0.005	100	<0.005	0.039	0.032-0.048	04-DEC-96
Barium		<0.1	<0.1	101	<0.1	1.0	0.9 - 1.1	04-DEC-96
Beryllium		<0.001	<0.001	115	<0.001	1.04	0.900 - 1.10	04-DEC-96
Cadmium		<0.001	<0.001	107	<0.001	1.00	0.900 - 1.10	04-DEC-96
Chromium		<0.01	<0.01	103	<0.01	1.00	0.90 - 1.10	04-DEC-96
Cobalt		<0.01	<0.01	102	<0.01	0.95	0.90 - 1.10	04-DEC-96
Copper		<0.01	<0.01	101	<0.01	0.96	0.90 - 1.10	04-DEC-96
Iron		0.15	0.17	103	<0.03	0.99	0.90 - 1.10	04-DEC-96
Lead		<0.01	<0.01	104	<0.01	0.98	0.90 - 1.10	04-DEC-96
Mercury		<0.001	<0.001	95	<0.001	0.001	0.001-0.002	04-DEC-96
Nickel		0.01	<0.01	104	<0.01	0.98	0.90 - 1.10	04-DEC-96
Selenium		<0.005	<0.005	85	<0.005	0.043	0.036-0.056	12-DEC-96
Silver		<0.005	<0.005	108	<0.005	1.01	0.900 - 1.10	04-DEC-96
Thallium		<0.1	<0.1	98	<0.1	0.9	0.9 - 1.1	04-DEC-96
Vanadium		<0.1	<0.1	104	<0.1	1.0	0.9 - 1.1	04-DEC-96
Zinc		0.02	0.02	103	<0.01	1.01	0.90 - 1.10	04-DEC-96

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Constituents	Original Duplicate	Duplicate Analysis Results	Blank # Analysis mg/l	Blank Analysis mg/l	Accuracy Range mg/l	Accuracy Spike mg/l	Date Analyzed
Potassium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sodium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Calcium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Magnesium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sulfate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chloride	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Alkalinity as CaCO3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Alkalinity	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Specific Conductance @ 25 degrees C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
pH	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phenol as N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nitrate-Nitrogen N/Nitrite as N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total-Cyanide	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chemical Oxygen Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dissolved Metals							
Antimony	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Arsenic	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Barium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Beryllium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cadmium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chromium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cobalt	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Copper	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iron	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Lead	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mercury	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nickel	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Selenium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Silver	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thallium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vanadium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zinc	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled: 26-NOV-96 13:45
Date Received: 03-DEC-96
Analysis Date: 10-DEC-1996 21:31
File: /chem/5971A.i/va121096.b/dec101701017.d
Project Info: Sanitation Inc. Landfill, Lewistown, MT
Sample Info: SIP-2

Lab No.: 96-68799
Report Date: 12/12/96 15:27
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	**75-71-8**	**1.3**	
1,1-Dichloroethane	**75-34-3**	**<1.0**	**0.30J**
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

ENERGYLABORATORIES, INC.
70 SOUTH 30TH • 120 MOUNTAIN VIEW • BILLINGS, MONTANA 59101 • (406) 252-6325
BOZEMAN, MONTANA • 587-3031

Client: Dawkins and Associates, Inc.
Date Sampled: 26-NOV-96 12:45
Date Received: 03-DEC-96
Analysis Date: 10-DEC-1996 21:11
File: /chem/32/12.1/vol1196.b/dec1210107.d
Protocol Info: Montezuma Inc. Longhill, Farmington, NM
Sample Info: 32P-2

Lab No.: 32-6993
Report Date: 12/12/96 12:27
Extraction Method: EPA 8030
Sample Matrix: WATER; pH< 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

COMPOUNDS	CAS NO.	CONCENTRATION UNITS - ug/L (ppb) RESULT	QUALIFIER
Acetone	67-64-1	<20	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<2.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<2.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	**75-69-4**	**<1.0**	**0.32J**
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.55	96	80--120
Toluene d8	10.0	10.4	104	80--120
p-Bromofluorobenzene	10.0	9.78	98	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled:
Date Received: 03-DEC-96
Analysis Date: 10-DEC-1996 20:30
File: /chem/5971A.i/va121096.b/dec101601016.d
Project Info: Sanitation Inc. Landfill, Lewistown, MT
Sample Info: Trip Blank

Lab No.: 96-68800
Report Date: 12/12/96 15:26
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

Client: Dawson and Associates, Inc.
Data Sampled:
Data Received: 03-DEC-96
Analysis Date: 10-DEC-1996 20:30
File: /home/5371A.L/vol1170%E.b/dec1696101616.d
Project Name: Resistron Inc. Kenilworth, Lawrence, NJ
Sample Info: Trip Blank

Lab No.: 96-5880
Report Date: 12/12/96 15:36
Extraction Method: EPA 5030
Sample Matrix: WATER; pH < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

COMPOUND	CAS NO.	CONCENTRATION UNITS = ug/L (ppb) RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
2-Butanone	78-93-3	<5.0	U
n-Butylbenzene	104-51-8	<1.0	U
sec-Butylbenzene	135-98-8	<1.0	U
tert-Butylbenzene	98-06-6	<1.0	U
Carbon disulfide	75-15-0	<5.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
2-Chlorotoluene	95-49-8	<1.0	U
4-Chlorotoluene	106-43-4	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<5.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<5.0	U
Iodomethane	74-88-4	<5.0	U
Methyl ethyl ketone	78-93-3	<5.0	U
Methyl isobutyl ketone	108-10-1	<5.0	U
Methylene chloride	75-09-2	<5.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

Report continued on page 2!

Sample Info: Trip Blank

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	8.48	85	80--120
Toluene d8	10.0	10.8	108	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CG Reviewing Supervisor: WOM

Quality Control Sample: Laboratory Reagent Blank 10-DEC-96 19:55
Report Date: 12/11/96 11:04
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va121096.b/dec101501015.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

Quality Control Program; Laboratory Reagent Blank 10-DEC-96 13:22.
Report Date: 11/21/96 21:04
Extraction Method: 5PA 8260
Sample Matrix: WATER
File: /chem/5971A.m/ms12096.b/daio10520101S.d
Comment: This laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

COMPOUND	CONCENTRATION UNITS = ug/L (ppb) CAS NO	RESULT	QUALIFIERS
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<50	U
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<2.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<5.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<50	U
Iodomethane	74-88-4	<5.0	U
Methyl ethyl ketone	78-93-3	<50	U
Methyl isobutyl ketone	108-10-1	<50	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,2,4-Trichlorobenzene	120-82-1	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

Report continued on page 21.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.22	92	80--120
Toluene d8	10.0	9.79	98	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CS Reviewing Supervisor: WDJ

EPA METHOD 8260 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 10-DEC-96 23:17
Report Date: 12/11/96 13:21
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va121096.b/dec102001020.d
Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	4.53	91	60--140
Chlorobenzene	5.00	4.58	92	60--140
1,3-Dichlorobenzene	5.00	4.75	95	60--140
1,4-Dichlorobenzene	5.00	4.73	95	60--140
1,2-Dichloroethane	5.00	4.46	89	60--140
1,1-Dichloroethene	5.00	4.69	94	60--140
trans-1,2-Dichloroethene	5.00	4.83	97	60--140
1,2-Dichloropropane	5.00	3.99	80	60--140
Ethyl benzene	5.00	4.94	99	60--140
Tetrachloroethene	5.00	4.51	90	60--140
1,1,2-Trichloroethane	5.00	4.53	91	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.0	100	80--120
Toluene d8	10.0	9.79	98	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

REPORT COMMENTS: None

Analyst: CB Reviewing Supervisor: WM

Lab Nos.: 96-68799 - 96-68800

Date: 03-DEC-96

Received by: Randa Hoelscher

Logged In by: Randa Hoelscher

SAMPLE CONDITION QA/QC REPORT

This report provides information about the condition of the sample(s) and associated sample custody information on receipt at the laboratory.

Chain of Custody Form Completed & Signed	Yes	Comments:
Chain of Custody Seal	Yes	Comments:
Intact	Yes	Comments:
Signature Match Chain of Custody vs. Seal	Yes	Comments:
Samples Received Cold	Yes	Comments:
Samples Received Within Holding Time	Yes	Comments:
Samples Received in Proper Containers	Yes	Comments:
Samples Received Properly Preserved	Yes	Comments:

Samples requiring analysis for volatile organics are tested for proper preservation at the time of analysis. Any preservation problems encountered for these samples are noted on the analytical parameter report pages.

Client notified about sample discrepancies:

Who: _____ By: _____ Date/Time: _____

Method of Shipping: UPS

Additional comments: _____

ENERGY LABORATORIES, INC
P.O. Box 30916 1120 South 27th Street
Billings, Montana 59107

toll-free 800-735-4489
voice 406-252-6325
fax 406-252-6069

CHAIN OF CUSTODY RECORD

PLEASE PRINT OR TYPE ALL INFORMATION EXCEPT SIGNATURES

P.O. #

Project Name / Address
SANITATION, INC. LANDFILL
LEWISTOWN MT

Contact Name & Phone
BRUCE SIEGMUND
406 419 8627

Sampler's signature
[signature]

Invoice to:
DAMSCHEN + ASSOC.
PO BOX 4817
HELENA, MT 59604

Report to:
DAMSCHEN

DATE	TIME	composite	grab sample	SAMPLE I.D.	number of containers	Sample Type: A W S V U O / Air Water Soils/solids Vegetation Urine Other	Analysis Requested: MT. SOLID WASTE TABLE 1, DOMESTIC WASTE + AMMONIA N							Comments, Special Instructions, etc.
11/26/96	1345		x	SIP-2	6 W		X							
				TRIP BLANK - VOC										
														UPS WOULD NOT SHIP ON 11/27/96. SAMPLES HELD UNDER REFRIGERATION UNTIL 12/2/96. (BS)
														PLEASE RETURN COOLER W/ ~10 C.O.C. FORMS + 1 FEW CUSTODY SEALS. THANKS. (BS)

1. Relinquished (signature)	Date	Time	Received by: (signature)	3. Relinquished (signature)	Date	Time	Received by (signature):
[signature]	11/27/96	1700					

2. Relinquished (signature)	Date	Time	Received by: (signature)	4. Relinquished (signature)	Date	Time	Received for laboratory by (signature):
[signature]	12/2/96	1400			12/03/96	1055	Sonda Hoelscher

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number SANITATION INC Well Number S1MW-2

Sampler(s) BS

Date 10/22/96 Time 0930

Conditions WINDY OVERCAST 43°

Field Data: Table (circle) (1) 2

Depth to Water 37.15 Total Depth 42.3

Volume of Water Purged PURGED DRY ~ 2 GAL

START OF PURGE POST PURGE

Temperature--#1 ____ --#2 ____ --#3 ____ --#4 ____

Conductivity--#1 1180 --#2 ____ --#3 ____ --#4 1071

pH--#1 7.24 --#2 ____ --#3 ____ --#4 7.34

Recovery: h_1 0.00 h_2 0.01 time 12 SEC

Sample Preservatives:

1000 ml, 6, w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow) ____
250 ml w/ HNO_3 (red), filtered ____
250 ml w/ NaOH (green) ____
500 ml w/ no preservative ____
40 ml, 2, w/ HCl (blue) ____

Comments (attach change of instrumentation information to this sheet if necessary):

DANIELSON & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number [illegible] INC Well Number SMW-2

Sampler(s) [illegible]

Date 10/22/94 Time 0930

Conditions [illegible] 13"

Field Data: Table (circle) 1 2

Depth to Water [illegible] Total Depth [illegible]

Volume of Water Purged [illegible]

Temperature -#1 [illegible] -#2 [illegible] -#3 [illegible] -#4 [illegible]

Conductivity -#1 1120 -#2 [illegible] -#3 [illegible] -#4 1074

pH -#1 7.27 -#2 [illegible] -#3 [illegible] -#4 7.24

Recovery: h [illegible] h [illegible] time 12 Sec

Sample Preservative:
1000 ml, 6; w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow) X
250 ml w/ HNO_3 (red); filtered
250 ml w/ NaOH (green)
500 ml w/ no preservative
40 ml, 2; w/ HCl (blue)

Comments (attach change of laboratory/analytical information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number SANITATION INC Well Number SIMW-3

Sampler(s) BS

Date 10/22/97 Time 1030

Conditions

Field Data: Table (circle) 1 2

Depth to Water 33.90 Total Depth 39.25

Volume of Water Purged PURGED DRY ~2 GAL

Temperature--#1 START OF PURGE --#2 --#3 --#4 POST-SAMPLING

Conductivity--#1 717 --#2 --#3 --#4 736

pH--#1 7.48 --#2 --#3 --#4 7.54

Recovery: h_1 0.00 h_2 0.01 time 7 SEC

Sample Preservatives:

1000 ml, 6, w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow) X
250 ml w/ HNO_3 (red), filtered
250 ml w/ NaOH (green)
500 ml w/ no preservative
40 ml, 2, w/ HCl (blue)

Comments (attach change of instrumentation information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.

Landfill Ground-Water Monitoring Field Report

Project Name/Number: Cedar Trace - MW 2 Well Number: SP-MW-3

Sampler(s): BS

Date: 10/23/94 Time: 10:30

Conditions:

Field Data:

Depth to Water: 85.30 Total Depth: 39.25

Volume of Water Purged: Gasoline Odor - 2 Gal

Temperature--#1: 65.4°C --#2: --#3: --#4:

Conductivity--#1: 741 --#2: --#3: --#4: 730

pH--#1: 7.96 --#2: --#3: --#4: 7.94

Recovery: Good % Good Time: 3 Sec

Sample Preservatives:

1000 ml, 6, w/ no preservative: N/A

250 ml w/ H_2SO_4 (yellow): X

250 ml w/ HNO_3 (red), filtered:

250 ml w/ NaOH (green):

500 ml w/ no preservative:

40 ml, 2, w/ HCl (blue):

Comments (attach change of information information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.

Landfill Monitoring Well Sample Report

Project Name/Number SANITATION DUC Well Number SIP-2

Sampler(s) B. SIEGMUND

Date 11/26/96 Time 1345

Conditions CLEAR SUNNY 25°F 1' SNOW

Field Data: Table (circle) 1 2

Depth to Water 54.5 Total Depth 56.9

Volume of Water Purged ~1 GAL PRIOR TO SAMPLE / ~1/2 G. POST-SAMPLE
~1/2 GAL @ SAMPLE

Temperature--#1 <49°F --#2 ____ --#3 ____ --#4 ____

Conductivity--#1 871 --#2 860 --#3 ____ --#4 ____

pH--#1 8.86 --#2 8.10 --#3 ____ --#4 ____

Check off; if not taken, make note in Comments section:

1000 ml, 6, w/ no preservative N/A
250 ml w/ H_2SO_4 (yellow) X
250 ml w/ HNO_3 (red), filtered ____
250 ml w/ NaOH (green) ____
500 ml w/ no preservative ____
40 ml, 2, w/ HCl (blue) ____

SAMPLES ARE FAIRLY MUDDY

Comments (attach change of instrumentation information to this sheet if necessary):

PIEZOMETER - 1.25" SCH 40 PVC, HAND-CUT ~0.075" & HAND-CUT SLOTS// NON-DECON - INTENDED FOR WATER LEVEL MONITORING// PURGED DRY 4X, THEN SAMPLED// VERY MUDDY - PURGED DRY 3X MORE AFTER SAMPLING// OUTFITTED w/ 1/2" OD INERTIAL PUMP + LOW-FLOW FOOT VALVE - DEDICATED.


groundwater detected)
APPROX. WASTE LIMITS
SIG-3

File: Fergus Co.
Sanitation Inc
grd wtr (ANALY)

DAMSCHEN & ASSOCIATES, INC.
CONSULTING ENGINEERS

2030 11TH AVENUE • SUITE 11
P.O. BOX 4817 • HELENA, MT 59604

TELEPHONE (406) 449-8627
FAX (406) 449-8631

August 16, 1996

RECEIVED
AUG 19 1996
Montana Department of
Environmental Quality
Waste Management Division

Ms. Pat Potts
MDEQ Waste Management Division
P.O. Box 200901
Helena, MT 59620-0901

Dear Ms. Potts:

Enclosed please find the results of the Spring, 1996 ground-water analyses from the Sanitation, Inc. landfill in Lewistown, Montana. The sampling was performed on June 10, 1996.

Ground-Water Flow

Static water levels were considerably lower than those measured previously; as much as 1.8 feet in monitoring well SIMW-3. This is a significant change in water level in a relatively thin zone that maintains only a few feet of water or, in the case of SIMW-1, hydraulic head. However, the ground-water flow map shows that the direction and overall rate of flow has not changed significantly over time, with the exception of the vicinity of monitoring well SIMW-1.

Recharge rates do not appear to have changed since the previous measurements, again, with the exception of well SIMW-1. SIMW-1 recharged at a rate of 0.01 feet in 8 minutes, SIMW-2 recovered at a rate of 0.01 feet in 7 seconds, and SIMW-3 recovered at a rate 0.01 feet in 12 seconds. All of the measurements were taken after purging and sample collection but before full recovery occurred. The readings were taken at the later stages of recovery, however, so rates appear somewhat slow in the cases of SIMW-2 and -3. These rates, however, are compatible with the later-stage recovery rates noted during the slug tests, so it would appear that no significant changes have occurred with regard to the rate of ground-water flow or hydraulic conductivity at well SIMW-2 and -3.

Monitoring well SIMW-1 recovered somewhat more slowly than during the slug test, which was performed soon after the well was installed. The water level in the well was nearly two feet higher at that time, which seems to have affected the recharge rate. Recall that the water-bearing zone at SIMW-1 is a three-foot-thick stratum of sand punctuated by clay beds. There appear to be complexities within this zone that control the rate of recharge differently than if the stratum was a homogeneous material. The well also contained more silt than in

LEGEND

• SI-1	test boring (plugged)
▲ SIG-1	landfill gas monitoring well
⊡ SIP-1 (SWL=4100)	piezometer, showing static water level elevation
⊙ SIMW-1 (SWL=4100)	ground-water monitoring well, showing static water level elevation.
- - - - - -	water table contour; interval two feet
4080 ——— - - · · ·	contact of carbonaceous grey clay shale with overlying sandstone, siltstone and shale; dashed where obscured; dotted where uncertain

topographic contour interval = 2 ft
groundwater measurements from 6/10/96

File: Fergus Co.
Sanitation Inc
grd wtr (ANALY)

DAMSCHEN & ASSOCIATES, INC.
CONSULTING ENGINEERS

2030 11TH AVENUE • SUITE 11
P.O. BOX 4817 • HELENA, MT 59604

TELEPHONE (406) 449-8627
FAX (406) 449-8631

August 16, 1996

RECEIVED
AUG 19 1996
Montana Department of
Environmental Quality
Waste Management Division

Ms. Pat Potts
MDEQ Waste Management Division
P.O. Box 200901
Helena, MT 59620-0901

Dear Ms. Potts:

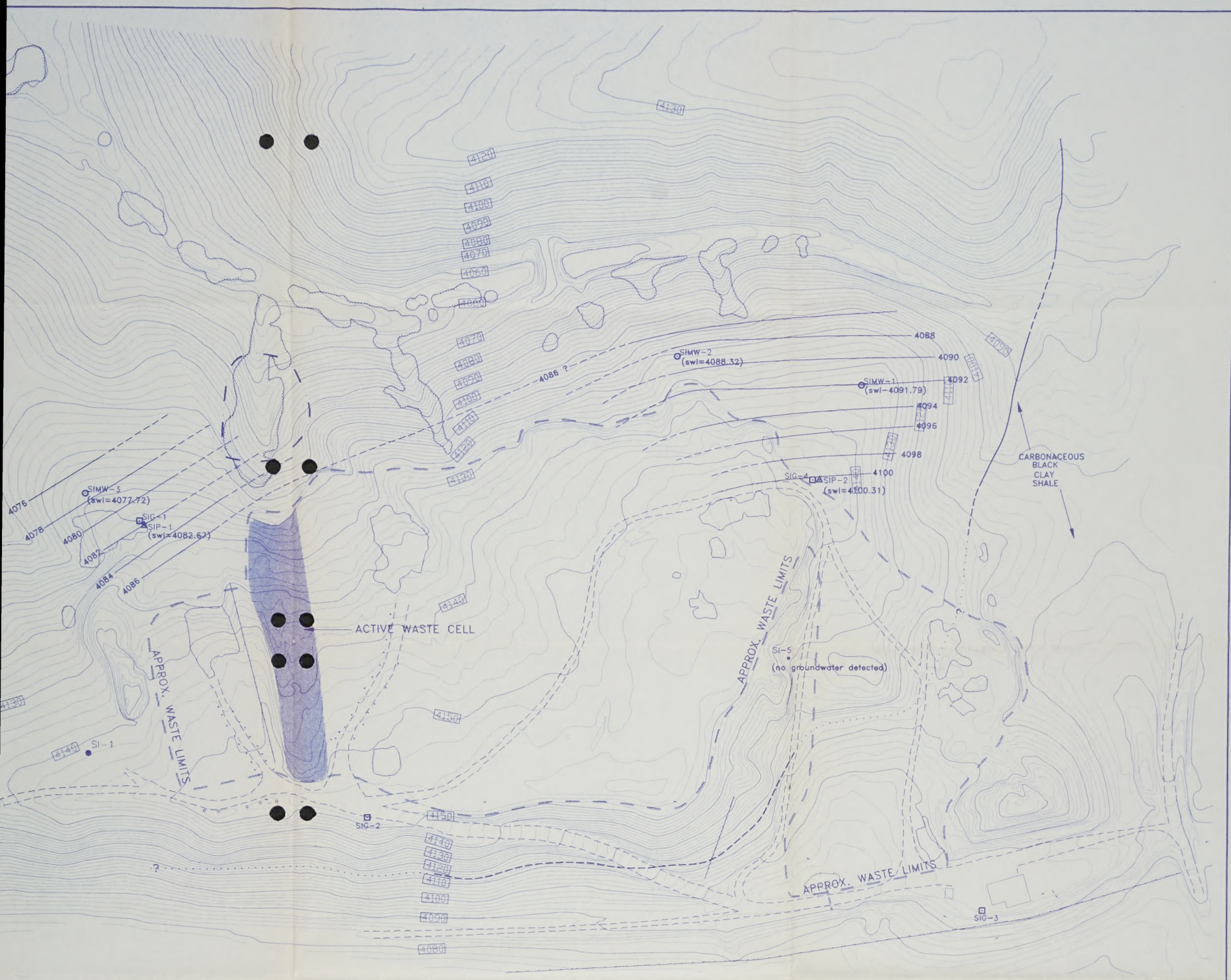
Enclosed please find the results of the Spring, 1996 ground-water analyses from the Sanitation, Inc. landfill in Lewistown, Montana. The sampling was performed on June 10, 1996.

Ground-Water Flow

Static water levels were considerably lower than those measured previously; as much as 1.8 feet in monitoring well SIMW-3. This is a significant change in water level in a relatively thin zone that maintains only a few feet of water or, in the case of SIMW-1, hydraulic head. However, the ground-water flow map shows that the direction and overall rate of flow has not changed significantly over time, with the exception of the vicinity of monitoring well SIMW-1.

Recharge rates do not appear to have changed since the previous measurements, again, with the exception of well SIMW-1. SIMW-1 recharged at a rate of 0.01 feet in 8 minutes, SIMW-2 recovered at a rate of 0.01 feet in 7 seconds, and SIMW-3 recovered at a rate 0.01 feet in 12 seconds. All of the measurements were taken after purging and sample collection but before full recovery occurred. The readings were taken at the later stages of recovery, however, so rates appear somewhat slow in the cases of SIMW-2 and -3. These rates, however, are compatible with the later-stage recovery rates noted during the slug tests, so it would appear that no significant changes have occurred with regard to the rate of ground-water flow or hydraulic conductivity at well SIMW-2 and -3.

Monitoring well SIMW-1 recovered somewhat more slowly than during the slug test, which was performed soon after the well was installed. The water level in the well was nearly two feet higher at that time, which seems to have affected the recharge rate. Recall that the water-bearing zone at SIMW-1 is a three-foot-thick stratum of sand punctuated by clay beds. There appear to be complexities within this zone that control the rate of recharge differently than if the stratum was a homogeneous material. The well also contained more silt than in



LEGEND

• SI-1	test boring (plugged)
SIG-1	landfill gas monitoring well
SIP-1 (SWL=4100)	piezometer, showing static water level elevation
SIMW-1 (SWL=4100)	ground-water monitoring well, showing static water level elevation.
— — — —	water table contour; interval two feet
4080 ——— — — · · ·	contact of carbonaceous grey clay shale with overlying sandstone, siltstone and shale; dashed where obscured; dotted where uncertain

topographic contour interval = 2 ft
groundwater measurements from 6/10/96

NORTH

FEET
0 50 100 200

E:\FORBRUCE\SANITINC\PLAN95.DWG 8/6/96

PROJECT TITLE
SANITATION INC.
Lewistown, Montana

SHEET TITLE
Site Plan

MONTANA
BARRY E. DAMSCHEN
3837E
REGISTERED PROFESSIONAL ENGINEER

Damschen & Associates, Inc.
CONSULTING ENGINEERS
• 2030 11th Ave., Suite 11 •
• HELENA, MONTANA •

JOB/ACAD NUMBER	95-53
DRAWN BY	B. LLOYD
APPROVED BY	B. DAMSCHEN
CHECKED BY	B. SIEGMUND
DATE	AUGUST, 1996

#	DATE	REVISION
△		
△		
△		
△		

SHEET NO.
1
of 1

File: Fergus Co.
Sanitation Inc
grd wtr (ANALY)

D&A
DAMSCHEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
2030 11TH AVENUE • SUITE 11
P.O. BOX 4817 • HELENA, MT 59604
TELEPHONE (406) 449-8627
FAX (406) 449-8631

August 16, 1996

RECEIVED
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Montana Department of
Environmental Quality
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Ms. Pat Potts
MDEQ Waste Management Division
P.O. Box 200901
Helena, MT 59620-0901

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the previous sampling event, presumably also because of the lowered water level. If the water level has risen somewhat by the next sampling event, we will be able to confirm that the behavior of the water level is a reflection of the supply available to the well through the saturated zone. One must also bear in mind that SIMW-1 is screened through a thin saturated zone, is very close to the limit of the recharge zone, and simply does not have a lot of water available for recharge at that point. Nonetheless, we are concerned about the integrity of all of the ground-water monitoring wells for which we are responsible, and we will watch this situation closely.

Assuming that the hydraulic conductivity has not changed significantly at well SIMW-2 and -3, the seepage velocity can be calculated using the data and assumptions initially applied to this facility. The initial calculations used at SIMW-2 were a hydraulic conductivity of 2.64 x 10^{-2} centimeters per second (cm/sec; 75 feet per day). The hydraulic gradient at this point is 0.047 and the porosity is assumed to be 0.35 because of the generally poor sorting of the sediments. The seepage velocity at SIMW-2, then, can be calculated using

$$V_s = KI/n_e$$

as 3.55 x 10^{-3} cm/sec, or 10 feet per day.

The hydraulic conductivity at SIMW-3 was measured at 5.14 x 10^{-3} cm/sec (14.6 ft/day) and the hydraulic gradient in the vicinity of the well is 0.047. Using the estimated porosity of 0.35, the seepage velocity can be calculated as 6.90 x 10^{-4} cm/sec or 1.96 ft/day.

Water Quality

Because of the very slow recharge and silty conditions encountered in monitoring well SIMW-1, sample retrieval was very difficult. The volatile organic, metals and nitrate analyses were considered to be the most important, so the volume of water available was used for those evaluations. A raw sample, which requires the largest volume, was not taken during this round of sampling, so sulfate, chloride, specific conductance and pH were are not included in the analytical report. The field values for pH and conductance are included on the field data sheets.

Since only two rounds of sampling have been completed to date at the Sanitation, Inc. facility, valid statistical analyses cannot yet be performed. Most of the analyte concentrations appear to be stable, except for a few minor fluctuations. For example, the nitrate concentration in the background well SIMW-1 was slightly lower than previously recorded while nitrate in samples from the other two wells were slightly higher. pH was higher at both down-gradient wells, as was the specific conductance. Selenium levels noted in the previous report fluctuated only slightly in all three wells, with no trend apparent.

Volatile organic compounds (VOCs) were detected in two of the three wells at the landfill. The sample from monitoring well SIMW-1 contained dichlorodifluoromethane estimated at 0.58 micrograms per liter (µg/l), 1,1,1-trichloroethane estimated at 0.34 µg/l, and trichloro-

fluoromethane estimated at 0.40 µg/l. These same three compounds were detected in similar concentrations in samples previously collected at the facility. The same three types of VOCs were found in the sample taken from monitoring well SIMW-2 in estimated concentrations of 0.18, 0.35 and 0.16 µg/l, respectively. No VOCs were detected in the sample from monitoring well SIMW-3. This contrasts the previous sampling event in which no VOCs were reported from SIMW-2 but several low-level volatiles were detected in SIMW-3.

This situation should probably not be surprising since the concentrations of the VOCs are so low. Some VOCs may be present in the ground water at SIMW-3, but in concentrations too low to detect. As yet, there are no clear indicators supporting the possibility that leachate is directly entering the ground water, so it is currently being assumed that the VOCs are being introduced to the ground water via some other means, such as being carried along with landfill gas. Small quantities of methane have been detected in one well at the landfill. Given the very small extent and low-flow characteristics of the saturated zone being monitored, any contaminants entering ground water from the landfill in liquid form would be detected very quickly and in significant concentrations.

None of this is intended to simply dismiss the existing conditions: The situation at this facility certainly demands careful monitoring. Until additional data can be acquired, it is difficult to draw any certain conclusions, and we will continue the regular semi-annual events as required by current regulations. We anticipate sampling at the facility again in October, 1996.

If you have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,

DAMSCHEN & ASSOCIATES, INC.

Bruce L. Siegmund
Project Hydrogeologist

Enclosures
CC: William Spoya, Sanitation, Inc.
Allen Gallagher, Sanitation, Inc.

Table of water level elevations in ground-monitoring wells and piezometers at the Sanitation, Inc. landfill, Lewistown, Montana.

Well	collar	10/16/95	06/10/96
SIP-1	4120.24	4085.23	4082.67
SIP-2	4151.34	4101.08	4100.31
SIMW-1	4137.88	4093.12	4091.79
SIMW-2	4123.71	4088.99	4088.32
SIMW-3	4110.91	4079.58	4077.72

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number Sanitation I M C, Well Number SIMW-1

Sampler(s) B. SIEGMUND C. SIEGMUND

Date 6\10\96 Time 9:30

Conditions 70° clear

Field Data: Table (circle) (1) 2

Depth to Water 46.09 Total Depth 47.5

Volume of Water Purged

Temperature--#1 60° --#2 --#3 --#4

Conductivity--#1 >90 --#2 --#3 --#4

pH--#1 8.36 --#2 --#3 --#4

Recovery: h_1 h_2 time

Sample Preservatives:

- 1000 ml, 6, w/ no preservative N/A
- 250 ml w/ H_2SO_4 (yellow) X
- 250 ml w/ HNO_3 (red), filtered X
- 250 ml w/ NaOH (green) X
- 500 ml w/ no preservative NO
- 40 ml, 2, w/ HCl (blue) X

Comments (attach change of instrumentation information to this sheet if necessary):

NO RAW SAMPLE OBTAINED, ONLY ~1.5' OF WATER IN WELL, RECHARGING V. SLOWLY, SO MUCH SILT THAT BAILERS WILL NOT HOLD WATER

DANSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Logger

Project Number: [illegible] Well Number: STAMW-1

Sampler(s): [illegible]

Date: 6/10/96 Time: 1:30

Conditions: [illegible]

Field Data:

Depth to Water: [illegible] Total Depth: [illegible]

Volume of Water Purged: [illegible]

Temperature: 60° [illegible]

Specific Cond.: 240 [illegible]

pH: 7.76 [illegible]

Sample Preservative:

(100) ml, 2 w/ no preservative: N/A

(20) ml w/ H_2O_2 (yellow): X

250 ml w/ HNO3 (red) filtered: X

250 ml w/ NaOH (green): X

250 ml w/ no preservative: N/A

40 ml, 2 w/ HCl (blue): X

Comments (with change of instruments or information in the field as it occurs):

[illegible]

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number SANITATION INC Well Number SIMW-2

Sampler(s) B. SIEGMUND / C. SIEGMUND

Date 6/10/96 Time 10:30

Conditions

Field Data: Table (circle) 1 2

Depth to Water 35.39 Total Depth 42.4

Volume of Water Purged

Temperature--#1 --#2 --#3 --#4

Conductivity--#1 1281 --#2 --#3 --#4 1149

pH--#1 7.40 --#2 --#3 --#4 7.17

Recovery: h_1 0 h_2 0.01 time 7 SEC - POST PURGE POST SAMPLING

Sample Preservatives:

- 1000 ml, 6, w/ no preservative N/A
- 250 ml w/ H_2SO_4 (yellow)
- 250 ml w/ HNO_3 (red), filtered
- 250 ml w/ NaOH (green)
- 500 ml w/ no preservative
- 40 ml, 2, w/ HCl (blue)

Comments (attach change of instrumentation information to this sheet if necessary):

DAMSCHEIN & ASSOCIATES, INC.
Laboratory Ground-Water Monitoring Field Report

Project Name/Number: [illegible] Well Number: [illegible]

Sampler(s): [illegible]

Date: [illegible] Time: 10:30

Conditions: _____

Field Data:

Depth to Water: [illegible] Total Depth: [illegible]

Volume of Water Purged: _____

Temperature-#1: _____ -#2: _____ -#3: _____ -#4: _____

Conductivity-#1: [illegible] -#2: _____ -#3: _____ -#4: [illegible]

pH-#1: [illegible] -#2: _____ -#3: _____ -#4: [illegible]

Recovery: [illegible] % [illegible] time: [illegible] Cost: [illegible]

Sample Preservative:
1000 ml, 6, w/ no preservative: N/A
250 ml w/ H_2SO_4 (yellow): _____
250 ml w/ HNO_3 (red), filtered: _____
250 ml w/ NaOH (green): _____
500 ml w/ no preservative: _____
40 ml, 2, w/ HCl (blue): _____

Comments (attach change of instrument(s) information as this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.
Landfill Ground-Water Monitoring Field Report

Project Name/Number SANITATION INC Well Number SIMW-3

Sampler(s) B. SIEGMUND C. SIEGMUND

Date 6/10/96 Time 1130

Conditions

Field Data: Table (circle) 1 2

Depth to Water 33.19 Total Depth 39.2

Volume of Water Purged ~2 GAL PURGED DRY

Temperature--#1 --#2 --#3 --#4

Conductivity--#1 7.25x102 --#2 --#3 --#4 709

pH--#1 7.79 --#2 --#3 --#4 ~~709~~ 7.32

Recovery: h_1 0.00 h_2 0.01 time 12 SEC

Sample Preservatives:

1000 ml, 6, w/ no preservative
250 ml w/ H_2SO_4 (yellow)
250 ml w/ HNO_3 (red), filtered
250 ml w/ NaOH (green)
500 ml w/ no preservative
40 ml, 2, w/ HCl (blue)

Comments (attach change of instrumentation information to this sheet if necessary):

DAMSCHEN & ASSOCIATES, INC.

Landfill Ground-Water Monitoring Field Report

Project Name/Number Santa Fe Springs Well Number 24 MW-3

Sampler(s) B. Stevenson C. Stevenson

Date 6/10/96 Time 1130

Conditions

Field Data: Table (circle) 1 2

Depth to Water 73.19 Total Depth 74.2

Volume of Water Purged 2 Gal Purged Dry

Temperature—#1 ____ —#2 ____ —#3 ____ —#4 ____

Conductivity—#1 7.25x10^3 —#2 ____ —#3 ____ —#4 7.09

pH—#1 7.57 —#2 ____ —#3 ____ —#4 7.32

Recovery: % 0.00 h 0.01 time 12:00

Sample Preservatives:

1000 ml, 6, w/ no preservative ____

250 ml w/ H_2SO_4 (yellow) ____

250 ml w/ HNO_3 (red; filtered ____

250 ml w/ NaOH (green) ____

500 ml w/ no preservative ____

40 ml, 2, w/ HCl (blue) ____

Comments (attach change of instrumentation information to this sheet if necessary):

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Bruce Siegmund
ADDRESS: Damschen & Associates
P.O. Box 4817
Helena, MT 59604

LAB NO.: 96-36870
DATE: 06/25/96 lm

RECEIVED
JUN 26 1996
DAMSCHEN & ASSOCIATES

WATER ANALYSIS

Sanitation, Inc. Landfill, SIMW-1
Sampled 06/10/96 @ 0930
Submitted 06/10/96

Constituent	mg/l (ppm)	Date Analyzed
Nitrate plus Nitrite as N	4.24	06/11/96
Total Cyanide	<0.005	06/11/96
Chemical Oxygen Demand	<1	06/11/96
Dissolved Metals		
Antimony	<0.05	06/12/96
Arsenic	<0.005	06/19/96
Barium	<0.1	06/12/96
Beryllium	<0.001	06/12/96
Cadmium	<0.001	06/12/96
Chromium	<0.01	06/12/96
Cobalt	<0.01	06/12/96
Copper	<0.01	06/12/96
Iron	<0.03	06/12/96
Lead	<0.01	06/12/96
Mercury	<0.001	06/12/96
Nickel	<0.01	06/12/96
Selenium	0.016	06/13/96
Silver	<0.005	06/12/96
Thallium	<0.1	06/12/96
Vanadium	<0.1	06/12/96
Zinc	0.02	06/12/96

ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MONTANA 59107 • PHONE (406) 252-6325
(800) 735-0048 • (800) 735-4489

LABORATORY REPORT

TO: Bruce Siegmund
ADDRESS: Dames&Moore & Associates
P.O. Box 4817
Helena, MT 59604

LAB NO.: 96-3269-10
DATE: 08/25/96 lm

RECEIVED
JUN 2 0 1996
DAMES & MOORE

WATER ANALYSIS

Sanitation, Inc. Landfill: SMW-1
Sampled 06/10/96 @ 0930
Submitted 06/10/96

Constituent	mg/l (ppm)	Date Analyzed
Nitrate plus Nitrite as N	4.24	06/11/96
Total Cyanide	<0.005	06/11/96
Chemical Oxygen Demand	<1	06/11/96
Dissolved Metals		
Antimony	<0.05	06/12/96
Arsenic	<0.005	06/12/96
Barium	<0.1	06/12/96
Beryllium	<0.001	06/12/96
Cadmium	<0.001	06/12/96
Chromium	<0.01	06/12/96
Cobalt	<0.01	06/12/96
Copper	<0.01	06/12/96
Iron	<0.03	06/12/96
Lead	<0.01	06/12/96
Mercury	<0.001	06/12/96
Nickel	<0.01	06/12/96
Selenium	0.016	06/12/96
Silver	<0.005	06/12/96
Thallium	<0.1	06/12/96
Vanadium	<0.1	06/12/96
Zinc	0.02	06/12/96

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled: 10-JUN-96 09:30
Date Received: 10-JUN-96
Analysis Date: 18-JUN-1996 17:23
File: /chem/5971A.i/va061896.b/jun180401004.d
Project Info: Sanitation, Inc. Landfill
Sample Info: SIMW-1

Lab No.: 96-36870
Report Date: 06/19/96 13:10
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	**75-71-8**	**<1.0**	**0.58J**
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	**71-55-6**	**<1.0**	**0.34J**

(report continued on page 2)

ENERGY LABORATORIES, INC.
P.O. Box 30916 • 1655 Corporate Drive • Billings, MT 59107 • (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Dames and Associates, Inc.
Date Sampled: 10-JUN-96 09:30
Date Received: 10-JUN-96
Analyzed Date: 14-JUN-1996 17:33
File: /dmm/5971A.E/vaus2896.b/jun0410104.d
Project Info: Remediation, Inc. Landfill
Sample Info: SLDM-1

Lab No: 96-13697-0
Report Date: 06/12/96 - 14:10
Extraction Method: EPA 5030
Sample Matrix: WATER; ppb = 1

EPA METHOD 8240
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUND	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<50	U
Benzene	71-43-2	<1.0	U
Bromobenzene	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromomethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<10	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<10	U
Methyl isobutyl ketone	108-10-1	<10	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	**75-69-4**	**<1.0**	**0.40J**
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	8.01	80	80--120
Toluene d8	10.0	10.7	107	80--120
p-Bromofluorobenzene	10.0	10.6	106	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: Co Reviewing Supervisor: NM

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Bruce Siegmund
ADDRESS: Damschen & Associates
P.O. Box 4817
Helena, MT 59604

LAB NO.: 96-36871
DATE: 06/25/96 lm

RECEIVED
JUN 20 1996
DAMSCHEN & ASSOCIATES

WATER ANALYSIS

Sanitation, Inc. Landfill, SIMW-2
Sampled 06/10/96 @ 1030
Submitted 06/10/96

Constituent	mg/l (ppm)	Date Analyzed
Sulfate	195	06/17/96
Chloride	47	06/17/96
Specific Conductance @ 25° C	1180 μmhos/cm	06/11/96
pH	6.9 s.u.	06/11/96
Nitrate plus Nitrite as N	4.18	06/11/96
Total Cyanide	<0.005	06/11/96
Chemical Oxygen Demand	<1	06/11/96
Dissolved Metals		
Antimony	<0.05	06/12/96
Arsenic	<0.005	06/19/96
Barium	<0.1	06/12/96
Beryllium	<0.001	06/12/96
Cadmium	<0.001	06/12/96
Chromium	<0.01	06/12/96
Cobalt	<0.01	06/12/96
Copper	<0.01	06/12/96
Iron	<0.03	06/12/96
Lead	<0.01	06/12/96
Mercury	<0.001	06/12/96
Nickel	<0.01	06/12/96
Selenium	0.008	06/13/96
Silver	<0.005	06/12/96
Thallium	<0.1	06/12/96
Vanadium	<0.1	06/12/96
Zinc	<0.01	06/12/96

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 2929 SOUTH 27TH STREET • CASPER, WY 82604 • PHONE (307) 235-0515
FAX (307) 234-1639

LABORATORY REPORT

TO: Anita Siegmund
ADDRESS: Damschen & Associates
P.O. Box 4817
Helena, MT 59604

LAB NO.: 96-3983-1
DATE: 06/25/96 tm

RECEIVED
JUN 2 0 1996
Damschen & Associates

WATER ANALYSIS

Sanitation, Inc. Landfill SMW-2
Sampled 06/10/96 @ 1020
Submitted 06/10/96

Constituent	Mg/L (ppm)	Date Analyzed
Sulfate	195	06/17/96
Chloride	47	06/17/96
Specific Conductance @ 25° C	1180 µmhos/cm	06/17/96
pH	6.9 s.u.	06/17/96
Nitrate plus Nitrite as N	4.18	06/17/96
Total Cyanide	<0.005	06/17/96
Chemical Oxygen Demand	< 1	06/17/96

Dissolved Metals

Antimony	<0.05	06/12/96
Arsenic	<0.005	06/18/96
Barium	<0.1	06/12/96
Beryllium	<0.001	06/12/96
Cadmium	<0.001	06/12/96
Chromium	<0.01	06/12/96
Cobalt	<0.01	06/12/96
Copper	<0.01	06/12/96
Iron	<0.03	06/12/96
Lead	<0.01	06/12/96
Mercury	<0.001	06/12/96
Nickel	<0.01	06/12/96
Selenium	0.005	06/13/96
Silver	<0.005	06/12/96
Thallium	<0.1	06/12/96
Vanadium	<0.1	06/12/96
Zinc	<0.01	06/12/96

ENERGY LABORATORIES, INC.
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Client: Damschen and Associates, Inc.
Date Sampled: 10-JUN-96 10:30
Date Received: 10-JUN-96
Analysis Date: 18-JUN-1996 02:49
File: /chem/5971A.i/va061796.b/jun172601026.d
Project Info: Sanitation, Inc. Landfill
Sample Info: SIMW-2

Lab No.: 96-36871
Report Date: 06/19/96 13:08
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	**75-71-8**	**<1.0**	**0.18J**
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	**71-55-6**	**<1.0**	**0.35J**

(report continued on page 2)

Client: Dawson and Associates, Inc.
Date Sampled: 10-JUN-86 10:30
Date Received: 10-JUN-86
Analysis Date: 18-JUN-1986 23:45
File: /chem/5971A.M/v8601V38.D/ms1T260102.d
Project Info: Sartrtation, Job, Landfill
Sample Info: MW4-2

Lab No.: 86-1683
Report Date: 06/25/86 12:06
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= 6.2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

COMPOUNDS	CAS NO.	CONCENTRATION UNITS = ug/L (ppb) RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<50	U
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
2-Butanone	78-93-3	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	5.182	
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<50	U
Isopropylbenzene	98-82-8	<1.0	U
Methyl ethyl ketone	78-93-3	<50	U
Methyl isobutyl ketone	108-10-1	<50	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	6.193

(report continued on page 3)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	**75-69-4**	**<1.0**	**0.16J**
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.50	95	80--120
Toluene d8	10.0	11.2	112	80--120
p-Bromofluorobenzene	10.0	11.1	111	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: Reviewing Supervisor:

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

LABORATORY REPORT

TO: Bruce Siegmund
ADDRESS: Damschen & Associates
P.O. Box 4817
Helena, MT 59604

LAB NO.: 96-36872
DATE: 06/25/96 lm

WATER ANALYSIS

RECEIVED
JUN 26 1996
DAMSCHEN & ASSOCIATES

Sanitation, Inc. Landfill, SIMW-3
Sampled 06/10/96 @ 1130
Submitted 06/10/96

Constituent	mg/l (ppm)	Date Analyzed
Sulfate	139	06/17/96
Chloride	30	06/17/96
Specific Conductance @ 25° C	750 µmhos/cm	06/11/96
pH	7.1 s.u.	06/11/96
Nitrate plus Nitrite as N	9.25	06/11/96
Total Cyanide	<0.005	06/11/96
Chemical Oxygen Demand	<1	06/11/96
Dissolved Metals		
Antimony	<0.05	06/12/96
Arsenic	<0.005	06/19/96
Barium	<0.1	06/12/96
Beryllium	<0.001	06/12/96
Cadmium	<0.001	06/12/96
Chromium	<0.01	06/12/96
Cobalt	<0.01	06/12/96
Copper	<0.01	06/12/96
Iron	0.10	06/12/96
Lead	<0.01	06/12/96
Mercury	<0.001	06/12/96
Nickel	<0.01	06/12/96
Selenium	0.022	06/13/96
Silver	<0.005	06/12/96
Thallium	<0.1	06/12/96
Vanadium	<0.1	06/12/96
Zinc	<0.01	06/12/96

ENERGY LABORATORIES, INC.

P.O. Box 30916 • 2393 Salt Creek Highway (82001) • Casper, Wyoming • (307) 235-0515
Fax (307) 234-1639 • 800-442-7234 • Casper, Wyoming

LABORATORY REPORT

TO: Bruce Siegmund
ADDRESS: Dames&Moore & Associates
P.O. Box 4817
Helena, MT 59604

LAB NO.: 96-3687-2
DATE: 08/25/96

RECEIVED
AUG 26 1996
DAMES&MOORE & ASSOCIATES

WATER ANALYSIS

Sanitation, Inc. Landfill, SIMW-2
Sampled 08/17/96 @ 1730
Submitted 08/17/96

Conventional	mg/L (mom)	Date Analyzed
Sulfate	139	08/27/96
Chloride	30	08/27/96
Specific Conductance @ 25° C	756 umhos/cm	08/17/96
pH	7.7 s.u.	08/17/96
Nitrate plus Nitrite as N	9.26	08/17/96
Total Cyanide	<0.005	08/17/96
Chemical Oxygen Demand	<1	08/17/96

Dissolved Metals		
Antimony	<0.05	08/12/96
Arsenic	<0.005	08/19/96
Barium	<0.1	08/12/96
Beryllium	<0.001	08/12/96
Cadmium	<0.001	08/12/96
Chromium	<0.01	08/12/96
Cobalt	<0.01	08/12/96
Copper	<0.01	08/12/96
Iron	0.10	08/12/96
Lead	<0.01	08/12/96
Mercury	<0.001	08/12/96
Nickel	<0.01	08/12/96
Selenium	0.022	08/19/96
Silver	<0.005	08/12/96
Thallium	<0.1	08/12/96
Vanadium	<0.1	08/12/96
Zinc	<0.01	08/12/96

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled: 10-JUN-96 11:30
Date Received: 10-JUN-96
Analysis Date: 18-JUN-1996 03:59
File: /chem/5971A.i/va061796.b/jun172801028.d
Project Info: Sanitation, Inc. Landfill
Sample Info: SIMW-3

Lab No.: 96-36872
Report Date: 06/19/96 13:08
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SO. 27TH STREET • BILLINGS, MT 59107 (406) • 24-HR. HOTLINE 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Dawson and Associates, Inc.
Date Sampled: 10-JUN-96 11:00
Date Received: 10-JUN-96
Analysis Date: 18-JUN-1996 03:59
File: /data/ms/ZLA.X/va0601196.b/jun1196102GR.d
Project Info: Sanitation, Inc. Landfill
Sample Info: SLOW-3

Lab No.: 96-36872
Report Date: 06/13/96 13:00
Extraction Method: EPA 5030
Sample Matrix: WATER; pH = 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUND	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<2.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	106-46-7	<1.0	U
1,4-Dichlorobenzene	541-73-1	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.82	98	80--120
Toluene d8	10.0	10.9	109	80--120
p-Bromofluorobenzene	10.0	11.2	112	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CO Reviewing Supervisor: MKM

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Damschen and Associates, Inc.
Date Sampled: 10-JUN-96 08:00
Date Received: 10-JUN-96
Analysis Date: 18-JUN-1996 18:35
File: /chem/5971A.i/va061896.b/jun180601006.d
Project Info: Sanitation, Inc. Landfill
Sample Info: TB1 SITB-1

Lab No.: 96-36869
Report Date: 06/19/96 13:10
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

Client: Dawson and Associates, Inc.
Date Sampled: 10-JUN-95 08:00
Date Received: 10-JUN-95
Analysis Date: 18-JUN-1995 18:35
File: /chem/3971A.I/va0718595.b/jun1895016ss.d
Project Inter Sanitation, Inc. Sample:
Sample Inter 1B1

Lab No.: 95-16863
Report Date: 06/13/95 13:10
Extraction Method: EPA 5030
Sample Matrix: WATER, pH= <2

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloroethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
1,3-Dichloropropane	142-28-9	<1.0	U
2,2-Dichloropropane	594-20-7	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.14	91	80--120
Toluene d8	10.0	10.9	109	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: [illegible] Reviewing Supervisor: MB

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,4-Trichlorobenzene	95-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m-p-Xylenes	108-38/106-42	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.14	91	80--120
Toluene d8	10.0	10.3	103	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

Qualifier codes explanations are below:
U: Compound was analyzed for but not detected.

Review Comments: None

Analyst: _____ Reviewing Supervisor: _____

Quality Control Sample: Laboratory Reagent Blank 18-JUN-96 02:15
Report Date: 06/18/96 15:10
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va061796.b/jun172501025.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

Quality Control Sample: Laboratory Reagent Blank LB-LCM-96 04:15
Report Date: 06/18/96 18:10
Extraction Method: EPA 1020
Sample Matrix: WATER
File: /chem/5972A.1/va06I1795.b/jun1796I020.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

COMPOUND	CAS NO.	CONCENTRATION UNITS = ug/L (ppb) RESULT	QUALIFIERS
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	108-46-7	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.21	92	80--120
Toluene d8	10.0	10.8	108	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CS Reviewing Supervisor: MTB

Quality Control Sample: Laboratory Reagent Blank 18-JUN-96 16:49
Report Date: 06/19/96 09:37
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va061896.b/jun180301003.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon disulfide	75-15-0	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

Quality Control Sample, Laboratory Reagent Blank 18-JUN-94 16:44
Report Date, 06/28/96 09:27
Extraction Method, EPA 5030
Sample Matrix, WATER
File, /chem/5972A.4/ve061896.D/1mlA2B1B1B1B1.d
Remarks, This laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIERS
Acetone	67-64-1	<50	U
Acrylonitrile	107-13-1	<20	U
Benzene	71-43-2	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform/Tribromomethane	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon Disulfide	75-15-0	<1.0	U
Carbon Tetrachloride	56-23-5	<1.0	U
Chloral Hydrate	302-17-0	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloroethane	75-00-3	<1.0	U
Dibromochloromethane	124-48-1	<1.0	U
1,2-Dibromo-3-Chloropropane	96-12-8	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
trans-1,4-Dichloro-2-butene	110-57-6	<2.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethyl benzene	100-41-4	<1.0	U
2-Hexanone	591-78-6	<20	U
Iodomethane	74-88-4	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Methyl isobutyl ketone	108-10-1	<20	U
Methylene chloride	75-09-2	<1.0	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U

(report continued on page 2)

EPA METHOD 8260
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl acetate	108-05-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.44	94	80--120
Toluene d8	10.0	10.5	105	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: Co Reviewing Supervisor: MTN

EPA METHOD 8260 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 17-JUN-96 12:52
Report Date: 06/17/96 13:21
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va061796.b/jun170401004.d
Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	5.37	107	60--140
Chlorobenzene	5.00	4.64	93	60--140
1,3-Dichlorobenzene	5.00	4.85	97	60--140
1,4-Dichlorobenzene	5.00	4.68	94	60--140
1,2-Dichloroethane	5.00	4.03	81	60--140
1,1-Dichloroethene	5.00	4.83	97	60--140
trans-1,2-Dichloroethene	5.00	4.76	95	60--140
1,2-Dichloropropane	5.00	4.40	88	60--140
Ethyl benzene	5.00	5.18	104	60--140
Tetrachloroethene	5.00	4.52	90	60--140
1,1,2-Trichloroethane	5.00	4.53	91	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.39	94	80--120
Toluene d8	10.0	10.5	105	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

REPORT COMMENTS: None

Analyst: Co Reviewing Supervisor: MM

EPA METHOD 8260 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 17-JUN-96 12:32
Report Date: 06/17/96 12:32
Extraction Method: EPA 3030
Sample Matrix: WATER
File: /chem/ppia.1/v8260120.b/jun17ppia1vom.d

Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

Spike Compound	CONCENTRATION UNITS = ug/L (ppb) Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	5.37	107	60--140
Chloroform	5.00	4.84	97	60--140
1,1-Dichloroethene	5.00	4.85	97	60--140
1,2-Dichloroethane	5.00	4.80	96	60--140
1,2-Dichloroethene	5.00	4.83	97	60--140
1,1-Dichloroethane	5.00	4.83	97	60--140
cis-1,2-Dichloroethene	5.00	4.78	95	60--140
1,2-Dichloropropane	5.00	4.60	92	60--140
Methyl benzene	5.00	5.16	104	60--140
Tetrachloroethene	5.00	4.80	96	60--140
1,1,2-Trichloroethane	5.00	4.53	91	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.20	92	60--120
Toluene d8	10.0	10.0	100	60--120
p-Bromofluorobenzene	10.0	10.3	103	60--120

REPORT COMMENTS: None

Analyst: CG Reviewing Supervisor

EPA METHOD 8260 MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 18-JUN-96 20:55
Lab No.: 96-36871MS
Report Date: 06/19/96 09:22
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/va061896.b/jun181001010.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Benzene	10.0	<1.00	10.2	102	60--140
Chlorobenzene	10.0	<1.00	10.4	104	60--140
1,1-Dichloroethene	10.0	<1.00	9.28	93	60--140
Toluene	10.0	<1.00	10.9	109	60--140
Trichloroethene	10.0	<1.00	10.2	102	60--140

EPA METHOD 8260 MATRIX SPIKE DUPLICATE REPORT

Quality Control Sample: Matrix Spike Duplicate Analysis 18-JUN-96 21:30
Lab No.: 96-36871MSD
File: /chem/5971A.i/va061896.b/jun181101011.d
Remarks: These compounds were again spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD %Rec	%RPD	---QC Limits-- RPD	Rec
Benzene	10.0	10.3	103	1.0	11	60--140
Chlorobenzene	10.0	10.3	103	1.0	13	60--140
1,1-Dichloroethene	10.0	9.36	94	0.9	14	60--140
Toluene	10.0	10.6	106	2.8	13	60--140
Trichloroethene	10.0	10.1	101	1.0	14	60--140

REPORT COMMENTS: The sample was diluted by 2 times before spiking.

Analyst: CO Reviewing Supervisor: [illegible]

EPA METHOD 8260 MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 15-JUN-96 10:55
Lab No.: 96-3587IMS
Report Date: 06/13/96 09:22
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.4/v4061895.b/jun1810010.d

Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	% Recovery	QC Limits
Benzene	10.0	<1.00	10.3	103	60--140
Chlorobenzene	10.0	<1.00	10.4	104	60--140
1,1-Dichloroethene	10.0	<1.00	9.28	93	60--140
Toluene	10.0	<1.00	10.5	105	60--140
Trichloroethene	10.0	<1.00	10.2	102	60--140

EPA METHOD 8260 MATRIX SPIKE DUPLICATE REPORT

Quality Control Sample: Matrix Spike Duplicate Analysis 15-JUN-96 10:10
Lab No.: 96-3587IMSD
File: /chem/5971A.4/v4061895.b/jun1810101.d

Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD % Rec	RPD	QC Limits RPD	QC Limits Rec
Benzene	10.0	10.7	103	1.0	11	60--140
Chlorobenzene	10.0	10.7	103	1.0	13	60--140
1,1-Dichloroethene	10.0	9.36	94	0.9	14	60--140
Toluene	10.0	10.4	105	0.8	13	60--140
Trichloroethene	10.0	10.1	101	1.0	14	60--140

REPORT COMMENTS: The sample was diluted by 2 times before spiking.

Analyst: _____ Reviewing Supervisor: _____

Lab Nos. 96-36870-2

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Constituent	Duplicate Analysis -------mg/l (ppm)------- Original	Duplicate	Spiked Analysis, % Recovery	Blank Analysis, mg/l (ppm)	-----Calibration Verification----- Sample Analysis, mg/l (ppm)	Acceptance Range, mg/l (ppm)	Date Analyzed
Sulfate	195	194	108	2	324	286-350	06/17/96
Chloride	47	47	99	<1	78	69-85	06/17/96
Specific Conductance @ 25° C, μmhos/cm	1160	1160	N/A	1	N/A	N/A	06/11/96
pH, s.u.	9.1	9.1	N/A	N/A	N/A	N/A	06/11/96
Nitrate plus Nitrite as N	0.24	0.24	103	<0.05	3.14	2.77-3.47	06/11/96
Total Cyanide	<0.005	<0.005	100	<0.005	0.214	0.139-0.271	06/11/96
Chemical Oxygen Demand	<1	<1	90	<1	38	23-43	06/11/96
Dissolved Metals							
Antimony	<0.05	<0.05	93	<0.05	1.04	0.90-1.10	06/12/96
Arsenic	<0.005	<0.005	99	<0.005	0.024	0.019-0.031	06/19/96
Barium	<0.1	<0.1	92	<0.1	1.0	0.9-1.1	06/12/96
Beryllium	<0.001	<0.001	94	<0.001	1.03	0.900-1.10	06/12/96
Cadmium	<0.001	<0.001	92	<0.001	0.988	0.900-1.10	06/12/96
Chromium	<0.01	<0.01	91	<0.01	0.99	0.90-1.10	06/12/96
Cobalt	<0.01	<0.01	90	<0.01	0.96	0.90-1.10	06/12/96
Copper	<0.01	<0.01	92	<0.01	0.98	0.90-1.10	06/12/96
Iron	<0.03	<0.03	92	<0.03	0.99	0.90-1.10	06/12/96
Lead	<0.01	<0.01	92	<0.01	1.00	0.90-1.10	06/12/96
Mercury	<0.001	<0.001	108	<0.001	0.001	0.001-0.002	06/12/96
Nickel	<0.01	<0.01	90	<0.01	0.99	0.90-1.10	06/12/96
Selenium	0.013	0.013	107	<0.005	0.090	0.058-0.092	06/14/96
Silver	<0.005	<0.005	92	<0.005	1.01	0.900-1.10	06/12/96
Thallium	<0.1	<0.1	88	<0.1	1.0	0.9-1.1	06/12/96
Vanadium	<0.10	<0.10	93	<0.10	1.01	0.90-1.10	06/12/96
Zinc	<0.01	<0.01	90	<0.01	0.96	0.90-1.10	06/12/96

Lab No.: 96-3H272-2

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analysis. They are performed to determine if the methodology is control and to monitor the laboratory's ability to produce accurate and precise results.

Constituent	Duplicate Analysis (mg/L) Original	Duplicate	% Recovery	System Blank Analysis, mg/L	Sample Analysis, mg/L	Calibration Verification Accuracy Range, mg/L	Date Analyzed
Sulfate	185	184	108	2	224	226-350	08/17/96
Chloride	47	47	80	<1	78	69-96	08/17/96
Specific Conductance @ 25° C, µmhos/cm	1180	1160	N/A	1	N/A	N/A	08/17/96
pH s.u.	8.1	8.1	N/A	N/A	N/A	N/A	08/17/96
Nitrate plus Nitrite as N	0.24	0.24	103	<0.05	2.14	2.17-2.47	08/17/96
Total Cyanide	<0.005	<0.005	75	<0.005	0.214	0.129-0.271	08/17/96
Chemical Oxygen Demand	<1	<1	70	<1	28	23-43	08/17/96

Dissolved Metals

Antimony	<0.05	<0.05	82	<0.05	1.04	0.90-1.10	08/17/96
Arsenic	<0.005	<0.005	90	<0.005	0.024	0.819-0.031	08/17/96
Barium	<0.1	<0.1	82	<0.1	1.0	0.9-1.1	08/17/96
Beryllium	<0.001	<0.001	94	<0.001	1.02	0.900-1.10	08/17/96
Cadmium	<0.001	<0.001	92	<0.001	0.942	0.900-1.10	08/17/96
Chromium	<0.05	<0.05	81	<0.01	0.92	0.90-1.10	08/17/96
Cobalt	<0.01	<0.01	80	<0.01	0.86	0.90-1.10	08/17/96
Copper	<0.01	<0.01	82	<0.01	0.88	0.90-1.10	08/17/96
Iron	<0.05	<0.05	86	<0.05	0.89	0.90-1.10	08/17/96
Lead	<0.01	<0.01	82	<0.01	1.00	0.90-1.10	08/17/96
Mercury	<0.0005	<0.0005	108	<0.0001	0.001	0.901-0.002	08/17/96
Nickel	<0.01	<0.01	90	<0.01	0.89	0.90-1.10	08/17/96
Selenium	0.013	0.013	101	<0.005	0.009	0.009-0.042	08/17/96
Silver	<0.005	<0.005	92	<0.005	1.01	0.900-1.10	08/17/96
Thallium	<0.1	<0.1	86	<0.1	1.0	0.9-1.1	08/17/96
Vanadium	<0.10	<0.10	93	<0.10	1.01	0.90-1.10	08/17/96
Zinc	<0.01	<0.01	90	<0.01	0.98	0.90-1.10	08/17/96

ENERGY LABORATORIES, INC.
P.O. Box 30916 1120 South 27th Street
Billings, Montana 59107
toll-free 800-735-4489
voice 406-252-6325
fax 406-252-6069

CHAIN OF CUSTODY RECORD

PLEASE PRINT OR TYPE ALL INFORMATION EXCEPT SIGNATURES

P.O. #

Project Name / Address: SANITATION, INC LANDFILL

Contact Name & Phone: BRUCE SIEGMUND

Sampler's signature: [signature]

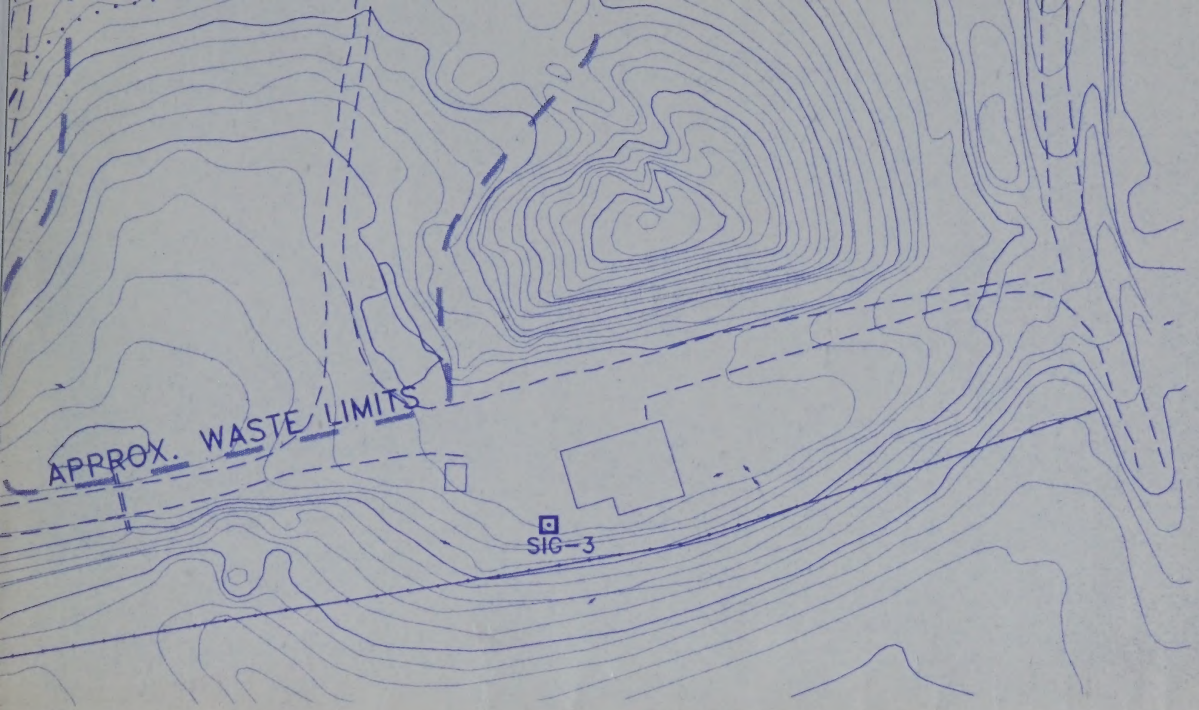
Invoice to: DAMSCHEN-ASSOC PO BOX 4817 HELENA, MT 59604

Report to:

DATE	TIME	composite	grab sample	SAMPLE I.D.	number of containers	Sample Type: A W S V U O Air Water Soils/solids Vegetation Urine Other	Analysis Requested: MT SOLID WASTE TABLE 1	MT SOLID WASTE TABLE 1 VOC ONLY							Comments, Special Instructions, etc.
6/10/96	800			TB1	~~2~~ 1	~~W~~		X							
↓	930			SIMW-1* NO RAW SAMPLE	5	W	X								
↓	1030			SIMW-2	6	W	X								
6/10/96	1150			SIMW-3	6	W	X								

1. Relinquished (signature)	Date	Time	Received by: (signature)	3. Relinquished (signature)	Date	Time	Received by: (signature)
[signature]	6/10/96	1520	Kathi Renier				

2. Relinquished (signature)	Date	Time	Received by: (signature)	4. Relinquished (signature)	Date	Time	Received at laboratory by: (signature)
					06/11/96	1523	Pam Funk



PROJECT TITLE

SANITATION INC.

Lewistown, Montana

SHEET TITLE

Site Plan

MONTANA
BARRY E. DAMSCHEN 3837E
REGISTERED PROFESSIONAL ENGINEER

D&A

Damschen & Associates, Inc.

CONSULTING ENGINEERS

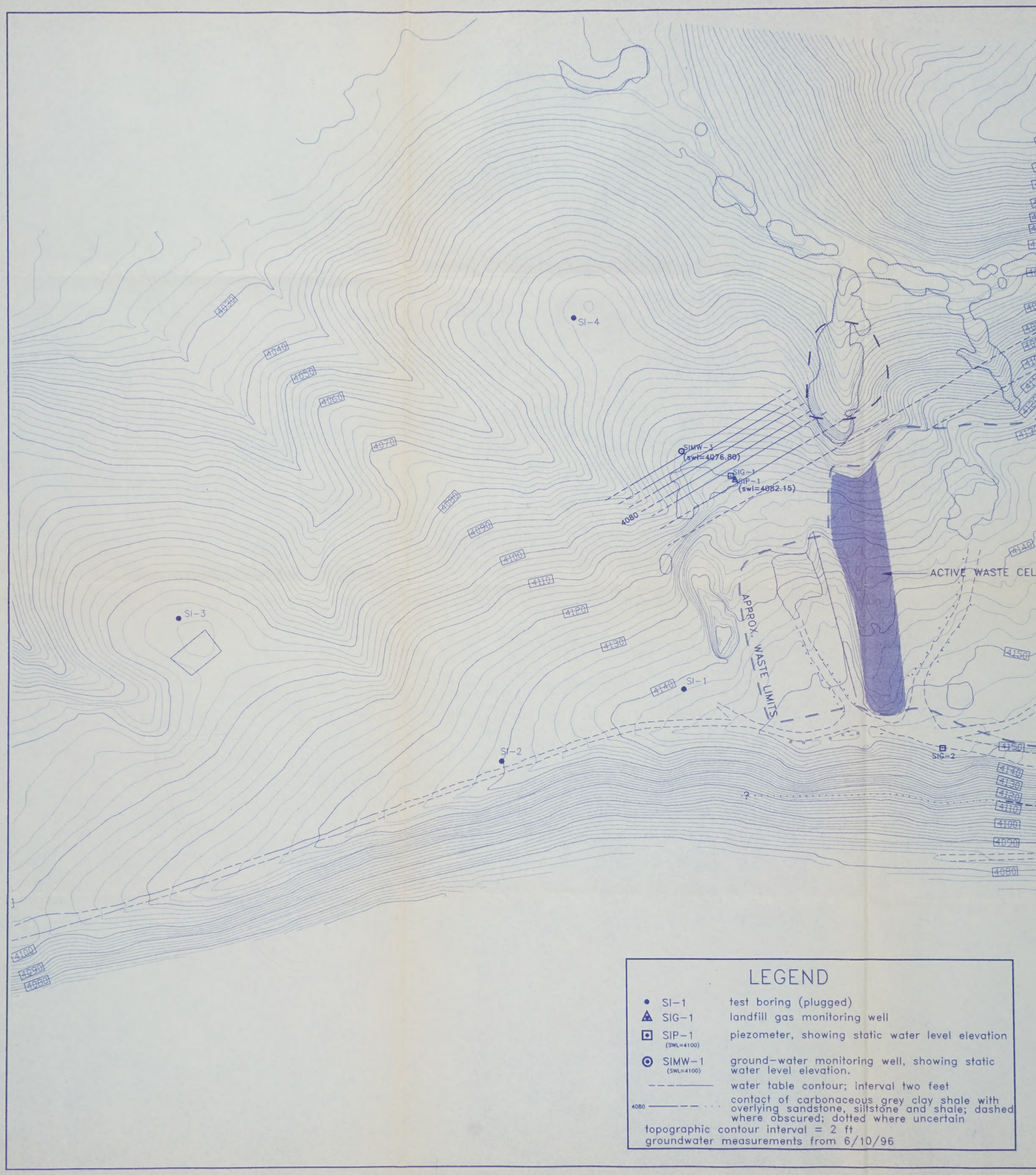
• 2030 11th Ave., Suite 11 •
• HELENA, MONTANA •

JOB/ACAD NUMBER	95-53	△		
DRAWN BY	B. LLOYD	△		
APPROVED BY	B. DAMSCHEN	△		
CHECKED BY	B. SIEGMUND	△		
DATE	AUGUST, 1996	#	DATE	REVISION

SHEET NO. 1 of 1

INC\PLAN95.DWG 2/17/97

*Sampled Oct + Nov 1996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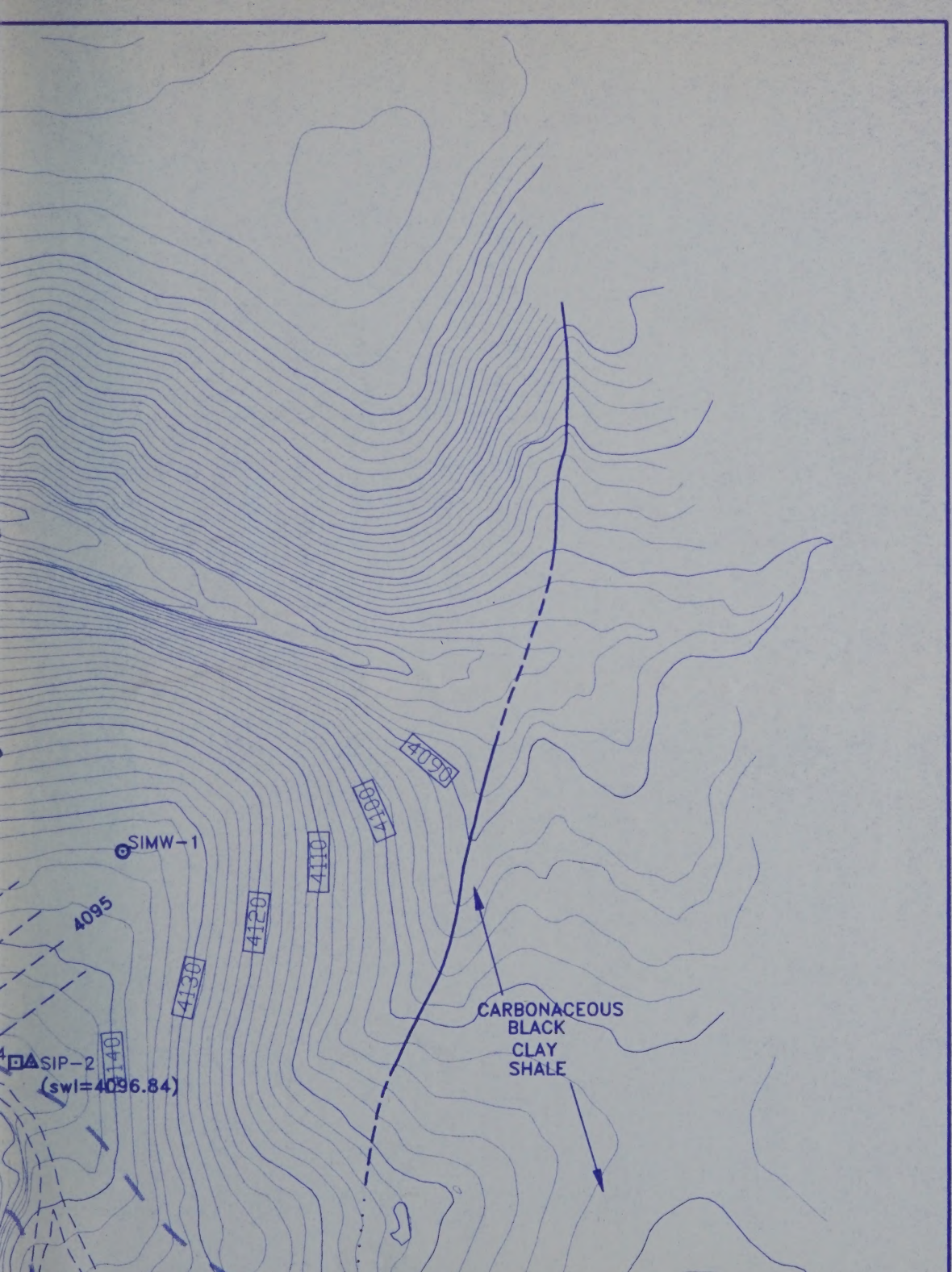
SI-3
SI-1
SI-2
SIMW-3
(swl=4076.80)
SIG-1
SIP-1
(swl=4082.15)
SIG-2
4080
APPROX. WASTE LIMITS
ACTIVE WASTE CEL
4030
4040
4050
4060
4070
4080
4090
4100
4110
4120
4130
4140
4150
4099
4098
LEGEND
SI-1 test boring (plugged)
SIG-1 landfill gas monitoring well
SIP-1 (SWL=4100) piezometer, showing static water level elevation
SIMW-1 (SWL=4100) ground-water monitoring well, showing static water level elevation.
water table contour; interval two feet
4080 contact of carbonaceous grey clay shale with overlying sandstone, siltstone and shale; dashed where obscured; dotted where uncertain
topographic contour interval = 2 ft
groundwater measurements from 6/10/96


4090
4100
4110
4120
4130
4140
4095
SIMW-1
SIP-2
(swl=4096.84)
CARBONACEOUS
BLACK
CLAY
SHALE

LEGEND

- test boring (plugged)
- landfill gas monitoring well
- piezometer, showing static water level elevation
- 1 ground-water monitoring well, showing static water level elevation.
- — water table contour; interval two feet
- . . . contact of carbonaceous grey clay shale with overlying sandstone, siltstone and shale; dashed where obscured; dotted where uncertain

ic contour interval = 2 ft
ter measurements from 6/10/96

NORTH

FEET
0 50 100 200

E:\FORBRUCE\SANITINC\PLAN95.DWG 2/17/97

PROJECT TITLE
SANITATION INC.
Lewistown, Montana

SHEET TITLE
Site Plan

MONTANA
BARRY E. DAMSCHEN
3837E
REGISTERED
PROFESSIONAL ENGINEER

D&A
Damschen & Associates, Inc.
CONSULTING ENGINEERS
• 2030 11th Ave., Suite 11 •
• HELENA, MONTANA •

JOB/ACAD NUMBER 95-53	△		SHEET NO.
DRAWN BY B. LLOYD	△		1
APPROVED BY B. DAMSCHEN	△		of 1
CHECKED BY B. SIEGMUND	△		
DATE AUGUST, 1996	#	DATE REVISION	

*Sampled Oct + Nov 1996